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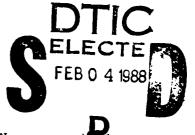


DCN 87-212-027-27-01

INSTALLATION RESTORATION PROGRAM
PHASE II - CONFIRMATION/QUANTIFICATION
STAGE 1

FINAL REPORT
FOR
AIR FORCE PLANT 4
FORT WORTH, TEXAS

VOLUME 7. APPENDICES A-3 AND A-4



HEADQUARTERS AERONAUTICAL SYSTEMS DIVISION
FACILITIES MANAGEMENT DIVISION (ASD/PMDA)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433-6503

AND

HEADQUARTERS, AIR FORCE SYSTEMS COMMAND COMMAND BIOENVIRONMENTAL ENGINEER (AFSC/SGPB) ANDREWS AIR FORCE BASE, DC 20334-5000

DECEMBER 1987

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OCCUPATIONAL & ENVIRONMENTAL HEALTH LABORATORY (USAFOEHL)
BROOKS AIR FORCE BASE, TEXAS 78235-5501

#### NOTICE

This report has been prepared for the United States Air Force by Radian Corporation, for the purpose of aiding in the implementation of the Air Force Installation Restoration Program. It is not an endorsement of any product. The views expressed herein are those of the contractor and do not necessarily reflect the official views of the publishing agency, the United States Air Force, nor the Department of Defense.

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SECTION SECTIONS SECTIONS SECTIONS SECTIONS SECTIONS

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# APPENDIX A-3 Soil Analytical Data

Soil samples for chemical analysis were submitted to Radian Analytical Services (RAS) Laboratory. The samples were logged in, and the data reported in "batches". Each batch submitted was assigned a RAS work order number. Table A.3-1 is a sequential listing of all analytical reports associated with AF Plant 4 Phase II. Stage 1 soil analyses by work order number.

Table A.3-2 cross-references soil borings or well numbers, OEHL numbers, and the RAS work order numbers under which the results are located. Methyl ethyl ketone analyses were performed by the Radian chromatography laboratory. The results of these analyses are provided in a memo included in this volume.

The RAS reports in this volume are arranged consecutively by RAS work order number. Pages in Appendix A are numbered by the volume number followed by the page number of that volume. For example, Page 7 001 is Page 1 of Volume 7.

[This page intentionally left blank.]

TABLE A.3-1. INDEX OF ANALYTICAL REPORTS, BY WORK ORDER NUMBER

86-01-205 86-01-206 86-03-008 86-03-021 86-03-176 86-03-184 86-05-072 86-05-078 86-07-086 86-08-058 86-09-040

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TABLE A. 3-2. SOIL SAMPLE LOG AND CROSS-REFERENCE TABLE

Well or Soil Boring Number	OEHL. Number	Date Sampled	Analyses Performed	Order Number	Date Extracted	Date Analyzed
HA-1	860029	5/12/86	Halogenated vols. (8010)	86-05-072		
			Pest and PCBs (8080)	86-05-078	5/15/86	5/22/86
			B/N & Acid Semi-vols. (8270)	86-05-078	5/15/86	5/22/86
			Oil and Grease	86-05-072		
HA-2	860030	5/12/86	Halogenated vols. (8010)	86-05-072		
1			Aromatic vols. (8020)	86-05-072		
			Pest and PCBs (8080)	86-05-078	5/15/86	5/22/86
			B/N & Acid Semi-vols. (8270)	86-05-078	5/15/86	5/22/86
			Oil and Grease	86-05-072		
	1 60030	20/11/6	Hydrocarbon Fuels	86-05-0/2		
nA-3	1 50000	09 /71 /6	Arcmetic vols (8010)	86-03-072		
			Pest and PCBs (8080)	86-05-078	5/15/86	5/22/86
			B/N & Acid Semi-vols. (8270)	86-05-078	5/15/86	5/22/86
			Oil and Grease	86-05-072		
			Hydrocarbon Fuels	86-05-072		
HA-4	860032	5/12/86	Halogenated vols. (8010)	86-05-072		
			Aromatic vols. (8020)	86-05-072		
			Pest and PCBs (8080)	86-05-078	5/15/86	5/22/86
			B/N & Acid Semi-vols. (8270)	86-05-078	5/15/86	5/22/86
			Ull and Grease	86-05-072		
UA.5	860033	5/11/06	Hydrocarbon Fuels	86-05-072		
	50000	00 /71 /6	Archetto wole (8010)	86-05-072		
			Pest and PRs (RORD)	86-05-078	5/15/86	5/22/86
			P/N & Acid Semi-vols. (8270)	86-05-078	5/15/86	5/22/86
			Oil and Grease	86-05-072		
			Hydrocarbon Fuels	86-05-072		
HA-6	860034	5/12/86	Halogenated vols. (8010)	86-05-072		
			Aromatic vols. (8020)	86-05-072		
				86-05-078	5/15/86	5/21/86
			B/N & Acid Semi-vols. (8270)	86-05-078	5/15/86	5/21/86
			Ull and Grease	86-05-072		
SB-1-A	860009	1/24/86	nyarocarbon fuers	86-03-072		
:		20 /2 /2	Aromatic vols. (8020)	86-01-205		
			Hydrocarbon Fuels	86-01-205		
SB-1-B	860010	1/24/86	EP Ext. and Met.	86-01-206		
			Ignitability	86-01-206		
SB-1-C	860011	1/24/86	Halogenated vols. (8010)	86-01-205		
			Aromatic vols. (8020)	86-01-205		
			Hydrocarbon Fuels	86-01-205		
SB-2-A	860012	1/24/86	Halogenated vols. (8010)	86-01-205		
			Aromatic vols. (8020)	86-01-205		

TABLE A.3-2. (Continued)

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SB-2-B			Analyses Performed	Mader	Extracted	Analyzed
SB-2-B						
	860013	1/24/86	Halogenated vols. (8010)	86-01-205		
			Aromatic vols. (8020)	86-01-205		
		•	Hydrocarbon Fuels	86-01-205		
SB-2-C	860014	1/24/86	Halogenated vols. (8010)	86-01-205		
			Aromatic vols. (8020)	86-01-205		
			Hydrocarbon Fuels	86-01-205		
SB-2-D	860015	1/24/86	EP Ext. and Met.	86-01-206		
	,	,	Ignitability	86-01-206		
SB~3-A	860022	1/26/86	Halogenated vols. (8010)	86-01-205	2/14/86	1/29/86
			Aromatic vols. (8020)	86-01-205	2/14/86	1/31/86
			Hydrocarbon Fuels	86-01-205	2/14/86	1/31/86
SB-3-C	860023	1/26/86	EP Ext. and Met.	86-01-206		
			Ignitability	86-01-206		
SB-4-A	860016	1/26/86	Hydrocarbon Fuels	86-01-205		
SB-4-B	860017	1/26/86	Hydrocarbon Fuels	86-01-205		
SB-4-C	860018	1/26/86	EP Ext. and Met.	86-01-206		
			Ignitability	86-01-206		
SB-4-D	860024	1/21/86	Hydrocarbon Fuels	86-01-205		
SB-5	800098	1/23/86	BP Ext. and Met.	86-01-206		
			Ignitability	86-01-206		
SB-6-A	860035	7/21/86	Alpha	86-07-088		
			Bets	86-07-088		
			Саппа	86-07-088		
SB-6-B	860036	7/21/86	Alpha	86-07-088		
			Beta	86-07-088		
			Gamma	86-07-088		
2B-6-C	860037	7/21/86	Alpha	86-07-088		
			Beta	86-07-088		
			Gamma	86~07~088		
SB-6-D	860038	7/21/86	Alpha	86-07-088		
			Beta	86-07-088		
			Ganna	86-07-088		
SB-7-A	860039	7/21/86	Alpha	86-07-088		
			Beta	86-07-088		
			Gamma	86-07-088		
SB-8-A	860040	7/21/86	Alpha	86-07-088		
			Beta	86-07-088		
			Gamma	86-07-088		
SB-9-A	860041	7/22/86	Oil and Grease	86-07-086		
			Hydrocarbon Fuels	96-07-086		
SB-9-B	860042	7/22/86	EP Ext. and Met.	980-01-086		
			Ignitability	980-07-086		
SB-9-C	860043	7/22/86	Oil and Grease	86-07-086		
			Hydrocarbon Fuels	980-00-98		
SB-10-A	860044	7/22/86	Oil and Grease	86-07-086		
			Hydrocarbon Fuels	86-07-086		

TABLE A.3-2. (Continued)

Well or Soil Boring Number	OEHL Number	Date Sampled	Analyses Performed	Order	Date Extracted	Date Analyzed
SB-10-B	860045	7/22/86	EP Ext. and Met.	86-07-086		
			Ignitability	980-01-086		
SB-11-A	940098	7/24/86	Alpha	86-07-095		
			Beta	86-07-095		
			Gamma	86-07-095		
SB-11-B	860047	7/24/86	Alpha	86-07-095		
			Beta	86-07-095		
			Gamma	86-07-095		
SB-11-C	860048	7/24/86	Alpha	86-07-095		
			Beta	86-07-095		
			Gamma	86-07-095		
HM-100-A	860001	1/20/86	Hydrocarbon Fuels	86-01-205		
HM-100-B	860002	1/20/86	Hydrocarbon Fuels	86-01-205		
HM-100-C	860003	1/20/86	Hydrocarbon Fuels	86-01-205		
			Halogenated vols. (8010)	86-01-205		
HM-103-A	860004	1/21/86	Aromatic vols. (8020)	86-01-205		
			Chromium	86-01-205		
HM-103-B	860005	1/21/86	Halogenated vols. (8010)	86-01-205		
			Aromatic vols. (8020)	86-01-205		
			Chromium	86-01-205		
HM-103-C	900098	1/21/86	BP Ext. and Met.	86-01-206		
			Ignitability	86-01-206		
HM-104-n	860007	1/22/86	E" Ext. and Met.	86-01-206		
			Ignitability	86-01-206		
HM-105	860053	8/11/86	Oil and Grease	86-08-058		
			Hydrocarbon Fuels	86-08-058		
HPM-105	860054	8/11/86	EP Ext. and Met.	86-08-058		
			Ignitability	86-08-058		
HM-106-A	860019	1/26/86	Methyl ethyl ketone	9/8/86 memo		
			Xylene	86-01-205		
			Oil and Grease	86-01-205		
HM-106-B	860020	1/26/86	EP Ext. and Met.	86-01-206		
			Ignitability	86-01-206		
HM-106-C	860021	1/26/86	Methyl ethyl ketone	9/8/86 шепо		
			Xylene	86-01-205		
			Oil and Grease	86-01-205		
HM-107	860049	8/11/86	Oil and Grease	86-08-058		
			Hydrocarbon Fuels	86-08-058		
HM-107	860050	8/11/86	EP Ext. and Met.	86-08-058		
			Ignitability	86-08-058		
HM 108	860051	8/11/86	Oil and Grease	86-08-058		
			Hydrocarbon Fuels	86-08-058		
HM-108	860052	9/11/06	A Pro tra da	96 00 069		
	77.000					



TABLE A.3-2. (Continued)

Well or Soil Boring Number	OEHL Number	Date Sampled	Analyses Performed	RAS Work Order Number	Date Extracted	Date Analyzed
P-20	860025	2/28/86	EP Ext. and Met.	8603-008		
			Ignitability	86-03-008		
			Volatiles (8240)	86-03-021		
P-21	860026	2/28/86	EP Ext. and Met.	86-02-008		
			Ignitability	86-03-008		
			Volatiles (8240)	86-03-021		
P-22 mud	860027	3/20/86	EP Ext, and Met.	86-03-176		
			Ignitability	86-09-040		
			Volatiles (8240)	86-03-184		
P-22 water	860027	3/20/86	Halogenated vols. (601)	86-03-176		
			Aromatic vols. (602)	86-03-176		
-23 mud	860028	3/20/86	EP Ext. and Met.	86-03-176		
			fgnitability	86-09-040		
			Volatiles (8240)	86-03-184		

LAB # 86-01-205	Sample 04 Sample 05 (entered units)	(5.9 (6.0	02/14/86 02/14/86	Sample 09 Sample 10 (entered units)	<5.1 59,000	02/14/86 02/14/86	C	Sample 14 Sample 13 (entered units)				02/14/86 02/14/86	
REPORT TEST	Sample 03 Sam (enter	(5.1	02/14/86 03	Sample 08 Sam (enterdenter	<b>(4.7</b>	02/14/86 05		Sample 13 Sampl (entered units) (entered	7.1			30	02/07/86
Serv RESULTS BY	Sample 02 (entered units)	(5.7	02/14/86	Sample <u>07</u> (entered units)	(6.7	02/14/86		Sample 12 (entered units)	7.4				02/01/86
Analytical	Sample 01 (entered units)	(4.7	02/14/86	Sample 06 (entered units)	4, 600	02/14/86		Sample 11 (entered units)		(5.7		02/14/86	
PAGE 2 RECEIVED: 01/28/86	TEST CODE	HC_IR	PREP_W date_complete	TEST CODE	HC_IR	2 PREP W date complete	1 1	TEST CODE		HC_IR	ONG_IR	- 1	PREP X date complete

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Analytical Ser RR	souts by te	REPORT ST	LAB # 86-01-205
TEST CODE ; Sample 16 default units ; (entered units)			
97.0			
	e 16 units) 97.0		

3				
'AGE 4 IECEIVED: 01/28/86	Analytical	Serv REP Results by Sample	REPORT Sample	LAB # 86-01-205
AMPLE ID 860009		TION 04B	FRACTION 04B TEST CODE SWB010 Date & Time Collected 01/24/86	NAME GC-HECD Halog. Vol SW846 Category
DATA FILEONC. FACTOR	G DATE INJECTED 01/28/86	01/28/86	ANALYST	RP VERIFIED BY MCL COMPOUNDS DETECTED 0
SCAN	COMPOUND	RESULT	SCAN	COMPOUND
	Chloromethane	Q		Trichloroethene ND
	Bromomethane	QN		Dibromochloromethane ND
	Vinyl Chloride	QN		1, 1, 2-Trichloroethane ND
	Chloroethane	QN		cis-1, 3-Dichloropropene ND
	Methylene Chloride	QN		2-Chloroethylvinyl Ether ND
	Trichlorofluoromethane	QN .		Bromoform ND
1	1, 1-Dichloroethene	QN		1, 1, 2, 2-Tetrachloroethane ND
1	1,1-Dichloroethane	QN		Tetrachloroethylene ND
	trans-1,2-Dichloroethene	Q		Chlorobenzene ND
	Chloraform	2		1, 3-Dichlorobenzene ND
	1,2-Dichloroethane	QN		1, 2-Dichlorobenzene ND
	1, 1, 1-Trichloroethane	2		1, 4-Dichlorobenzene ND
	Carbon Tetrachloride	QN		
	Bromodichloromethane	QN		
	1,2-Dichloropropane	Q		
	trans-1,3-Dichloropropene	QN		

PAGE 5 RECEIVED: 01/28/86

Analytical Serv REPORT Results by Sample

LAB # 86-01-205 Continued From Above

SAMPLE ID 860009

FRACTION 04B TEST CODE SW8010 NAME GC-HECD Halog. Vol. - SW846 Date & Time Collected 01/24/86 Category

NOTES AND DEFINITIONS FOR THIS REPORT

SCAN = scan number or retention time on chromatogram

All results reported in <u>vg/kg</u> unless otherwise specified

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified.

Second Levies		Vol SW846	ED BY MCL	RESULT	Q	Q	Q
positional assistanting to the property of the	LAB # 86-01-205	NAME GC-PID Arom. Vo	VERIFIED BY  d COMPOUNDS DETECTED	COMPOUND	1,3-Dichlorobenzene	1,2-Dichlorobenzene	1,4-Dichlarobenzene
X8555574 *** \$5555000	REPORT Sample	FRACTION 04C TEST CODE SW8020 Date & Time Collected 01/24/86	ANAL YST INSTRUMENT	SCAN	ļ		
	al Serv REP( Results by Sample	RACTION 04C Jate & Time Col	DATE INJECTED <u>01/30/86</u>	RESULT	- QN	Q	Q
Action	Analytical		D DATE INJE	COMPOUND	Ben zene	Toluene	Ethyl Benzene
CORPORATE SUBSTITUTE OF THE SU	PAGE 6 RECEIVED: 01/28/86	SAMPLE ID 860009	DATA FILE	SCAN	7	006	

AND DEFINITIONS FOR THIS REPORT. NOTES

SCAN = scan number or retention time on chromatogram.

ug/kg unless otherwise specified. All results reported in  $\frac{\log/kq}{\log}$  unless ND = not detected at detection limit of

1 ug/kg, unless otherwise specified.

PAGE 7 RECEIVED: 01/28/86	01/28/86	Analytica	=	Serv REP Results by Sample	REPORT Sample	LAB # 86-01-205
SAMPLE ID 860011	860011		FRACTI Date &	FRACTION 05B Date & Time Col	ACTION 05B TEST CODE SW8010 te & Time Collected 01/24/86	NAME GC-HECD Halog. Vol SW846 Category
DATA FILE CONC. FACTOR	TLE TOR	G DATE 1	INJECTED 01/28/86	01/28/86	ANALYST	VERIFIED BY MCL COMPOUNDS DETECTED O
SCAN	z	COMPOUND		RESULT	SCAN	COMPOUND
	1	Chlorometh	methane	QN		Trichloroethene ND
	I	Bromometh	aethane	QN		Dibromochloromethane ND
	ı	Vinyl Chlor	hloride	QN		1, 1, 2-Trichloroethane ND
	ł	Chloroeth	oethane.	Q		cis-1, 3-Dichloropropene ND
	1	Methylene Chloride	hloride	Q		2-Chloroethylvinyl Ether ND
7	F	Trichlorofluorometh	ethane	2		Bromoform ND
00	1	1,1-Dichloroeth	oethene	CN	-	1, 1, 2, 2-Tetrachloroethane ND
7	ı	1,1-Dichloroeth	oethane.	QN		Tetrachloroethylene ND
	tra:	trans-1,2-Dichloroeth	oethene.	QN		Chlorobenzene ND
	1	Ch.]	Chloroform	QN		1, 3-Dichlorobenzene ND
	1	1,2-Dichloroethane	oethane.	9		1,2-Dichlorobenzene ND
	ı	1, 1, 1-Trichloroethane	oethane.	2		1, 4-Dichlorobenzene ND
	ı	Carbon Tetrachlo	chloride	Ž		
	ı	Bromodichloromethane	omethane	Q		
	1	1, 2-Dichloropropane	propane	Q		
	tran	trans-1,3-Dichloropropene	propene	QN		

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PAGE 8 RECEIVED: 01/28/86

Analytical Serv REPORT Results by Sample

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LAB # 86-01-205 Continued From Above

active service active

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SAMPLE ID 860011

FRACTION 05B TEST CODE SW8010 Date & Time Collected 01/24/86

NAME GC-HECD Halog. Vol. - SW846 Category

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in ug/kg unless otherwise specified

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified.

7 008

	Vol SW846	ECTED MCL	RESULT	Q	Q	QN
LAB # 86-01-205	NAME GC-PID Arom. Category	VERIFIED BY COMPOUNDS DETECTED	COMPOUND	1,3-Dichlorobenzene	1,2-Dichlorobenzene	1,4-Dichlorobenzene
REPORT Sample	FRACTION OSC TEST CODE SW8020 Date & Time Collected 01/24/86	ANALYST	SCAN			
ical Serv REP( Results by Sample	FRACTION 05C Date & Time Col	DATE INJECTED <u>01/30/86</u>	RESULT	QN		QN
Analytica		D DATE IN	COMPOUND	Benzene	Toluene	Ethyl Benzene
PAGE 9 RECEIVED: 01/28/86	SAMPLE ID 860011	DATA FILE CONC. FACTOR	SCAN		7 009	

CONTRACTOR OF THE SECOND OF TH

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN ≈ scan number or retention time on chromatogram.

1 ug/kg, unless otherwise specified. All results reported in  $\frac{\log/kg}{\log}$  unless otherwise specified ND = not detected at detection limit of 1 ug/kg, unless other

REPORT LAB # 86-01-205 nple	TEST CODE SWB010 NAME GC-HECD Halog. Vol SWB46 ected 01/24/86	ANALYST RP COMPOUNDS DETECTED 1	SCAN COMPOUND RESULT	Trichloroethene ND	Dibromochloromethane ND	1, 1, 2-Trichloroethane ND	cis-1,3-Dichloropropene ND	2-Chloroethylvinyl Ether ND	Bromoform ND	1, 1, 2, 2-Tetrachloroethane ND	Tetrachloroethylene ND	Chlorobenzene ND	1, 3-Dichlorobenzene ND	1, 2-Dichlorobenzene ND	1, 4-Dichlorobenzene ND				
Analytical Serv REPI Results by Sample	FRACTION OGB TEST CODE SWBO Date & Time Collected 01/24/86	DATE INJECTED 01/30/86	ND RESULT	Chloromethane ND :	Bromomethane ND	Vinyl Chloride ND	Chloroethane ND	Methylene Chloride ND	Trichlorofluoromethane ND	1,1-Dichloroethene 11.9	1,1-Dichloroethane ND	trans-1,2-Dichloroethene ND	Chloroform ND	1,2-Dichloroethane ND	1,1,1-Trichloroethane ND	Carbon Tetrachloride ND	Bromodichloromethane ND :	1,2-Dichloropropane ND	trans-1,3-Dichloropropene ND :
			COMPOUND	ວົ	<b>m</b>	Vin	ວັ	hylen	raflu	−Dich	−Dich	-Dich		-Dich	Trict	n Tet	dichl	Dich	Dic

NAME GC-HECD Halog. Vol. - SW846 Continued From Above Category FRACTION 06B TEST CODE SW8010 Date & Time Collected 01/24/86 Serv Results by Sample Analytical Serv PAGE 11 RECEIVED: 01/28/86 SAMPLE ID 860012

18884488 18890223

POSSESSE LEAVING DESCRIPTION OF THE PROPERTY O

LAB # 86-01-205

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in <u>ug/kg</u> unless otherwise specified.

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified.

	Vol SW846	TECTED OF	RESULT	Q	Ü	Q	
LAB # 86-01-205	NAME GC-PID Arom. V	VERIFIED BY COMPOUNDS DETECTED	COMPOUND	1, 3-Dichlorobenzene	1,2-Dichlorobenzene	1,4-Dichlorobenzene	
REPORT Sample	ACTION 06B TEST CODE SW8020 Note & Time Collected 01/24/86	ANALYST	SCAN				
l Serv Results by Sample	ACTION 06B	INJECTED <u>01/30/86</u>	RESULT	QN	GN	Q	-
Analytica	FR	D DATE INJECT	COMPOUND	Benzene	Toluene	Ethyl Benzene	
PAGE 12 RECEIVED: 01/28/86	SAMPLE ID 860012	DATA FILE CONC. FACTOR	SCAN		7 012		

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in  $\frac{\log/kq}{\log}$  unless otherwise specified. ND = not detected at detection limit of 1 ug/kg, unless otherwise specified.

PAGE RECE SAMPI	PAGE 13 RECEIVED: 01/28/86 SAMPLE ID 860013	Anal	Analytical Serv REP Results by Sample FRACTION O7B TEST Date & Time Collected	cal Serv REPORT Results by Sample FRACTION O7B TEST CODE SW8010 Date & Time Collected 01/24/86	LAB # 86-01-205 NAME GC-HECD Halog. Vol SW846 Category
CONC	DATA FILE	BATE	DATE INJECTED <u>01/29/86</u>	ANALYST	MCL VERIFIED BY MCL COMPOUNDS DETECTED 0
	SCAN	COMPOUND	RESULT	SCAN	COMPOUND
		Chlore	Chloromethane ND		Trichloroethene ND
		Broad	Bromomethane ND		Dibromochloromethane ND
		Viny1	Vinyl Chloride ND		1, 1, 2-Trichloroethane ND
		Chlor	Chloroethane ND		cis-1, 3-Dichloropropene ND
	1	Methylene Chlori	Chloride ND		2-Chloroethylvinyl Ether ND
7		Trichlorofluoromethane	omethane ND		Bromoform ND
01		1, 1-Dichloroethene	roethene ND	1,	1, 1, 2, 2-Tetrachloroethane ND
13		1,1-Dichloroetha	roethane ND		Tetrachloroethylene ND
		trans-1,2-Dichloroethe	roethene ND	-	Chlorobenzene ND
		Cu	Chloroform ND		1, 3-Dichlorobenzene ND
		1,2-Dichloroethane	roethane ND		1,2-Dichlorobenzene ND
		1,1,1-Trichloroethane	roethane ND		1, 4-Dichlorobenzene ND
		Carbon Tetrachlori	chloride ND		
		Bromodichloromethane	omethane ND		
		1, 2-Dichloropropane	opropane ND		
		trans-1,3-Dichloropropene	opropene ND		

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LAB # 86-01-205	NAME GC-HECD Halog. Vol SW846
Continued From Above	Category
REPORT	FRACTION O7B TEST CODE SW8010
y Sample	Date & Time Collected 01/24/86
Analytical Serv REPC	FRACTION OZB
Results by Sample	Date & Time C
PAGE 14 RECEIVED: 01/28/86	SAMPLE ID 860013

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NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in ug/kg unless otherwise specified.

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified.

	1 SW846	ECTED O	RESULT	QN.	ND ND	Q	
LAB # 86-01-205	TEST CODE SW8020 NAME GC-PID Arom. Vol SW846 lected 01/24/86	VERIFIED BY  COMPOUNDS DETECTED	COMPOUND	1,3-Dichlorobenzene	1,2-Dichlorobenzene	1,4-Dichlorobenzene	
REPORT Sample	FRACTION O7B TEST CODE SW8020 Date & Time Collected 01/24/86	ANALYST	SCAN				
al Serv Results by Sample	RACTION O7B ate & Time Col	DATE INJECTED 01/30/86	RESULT	QN	Q	Q	•
Analytical		DATE INJE	COMPOUND	Benzene	Toluene	Ethyl Benzene	
PAGE 15 RECEIVED: 01/28/86	SAMPLE ID 860013	DATA FILE CONC. FACTOR	SCAN		<b>7</b> 0	 15	

NOTES AND DEFINITIONS FOR THIS REPORT.

1 ug/kg, unless otherwise specified.

LAB # 86-01-205	NAME GC-HECD Halog. Vol SW846 Category	RP VERIFIED BY MCL Q COMPOUNDS DETECTED 0	COMPOUND	Trichloroethene ND	Dibromochloromethane ND	1, 1, 2-Trichloroethane ND	cis-1, 3-Dichloropropene ND	2-Chloroethylvinyl Ether ND	Bramoform ND	1, 1, 2, 2-Tetrachloroethane ND	Tetrachloroethylene ND	Chlorobenzene ND	1, 3-Dichlorobenzene ND	1, 2-Dichlorobenzene ND	1, 4-Dichlorobenzene ND				
REPORT Sample	FRACTION OBB TEST CODE SWB010 Date & Time Collected 01/24/86	ANALYST	SCAN							1									
Analytical Serv Results by	FRACTION OBB Date & Time Col	G DATE INJECTED 01/29/86	COMPOUND	Chloromethane ND :	Bromomethane ND:	Vinyl Chloride ND	Chloroethane ND	Methylene Chloride ND	Trichlorafluoromethane ND	1,1-Dichloroethene ND 1	1,1-Dichloroethane ND	trans-1, 2-Dichloroethene ND	Chloroform ND	1,2-Dichloroethane ND	1, 1, 1-Trichloroethane ND	Carbon Tetrachloride ND	Bromodichloromethane ND:	1,2-Dichloropropane ND	trans-1,3-Dichloropropene ND :
PAGE 16 RECEIVED: 01/28/86	SAMPLE ID 860014	DATA FILE CONC. FACTOR	SCAN	1	i	ı	l	1	-	ı	ı		!	1	ı	1		1	traf

AND A COCCOM STANDARD FOR STORE POSSESS FOR CONTINUE POSSESS FOR THE POSSESS F

LAB # 86-01-205 Continued From Above	TEST CODE SW8010 NAME GC-HECD Halog. Vol SW846 lected 01/24/86
l Serv REPORT Results by Sample	ACTION OBB TEST CODE SW8010 te & Time Collected 01/24/86
Analytica	FRA
PAGE 17 RECEIVED: 01/28/86	SAMPLE 1D 860014

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in <u>uq/kq</u> unless otherwise specified.

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified.

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	Vol SW846	BY MCL	RESULT	Q	Q	Q .
LAB # 86-01-205	NAME GC-PID Arom. Vol	VERIFIED BY  COMPOUNDS DETECTED	COMPOUND	1, 3-Dichlorobenzene	1,2-Dichlorobenzene	1,4-Dichlorobenzene
REPORT Samp 1 e	ACTION OBB TEST CODE SW8020 Note & Time Collected 01/24/86	INSTRUMENT	SCAN			
tical Serv REPU Results by Sample	FRACTION OBB Date & Time Col	DATE INJECTED <u>01/30/86</u>	RESULT	- QN	Q Q	ac ON
Analytica			COMPOUND	Benzene	Toluene	Ethyl Benzene
PAGE 18 RECEIVED: 01/28/86	SAMPLE ID 860014	DATA FILE DOUG. FACTOR	SCAN		7 018	

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

1 ug/kg, unless otherwise specified. ug/kg unless otherwise specified All results reported in <u>ug/kg</u> unless ND = not detected at detection limit of

PAGE 19 RECEIVE	PAGE 19 RECEIVED: 01/28/86 SAMPLE ID 860022	Analytica) 6 FR/	tical Serv REP Results by Sample FRACTION 11B TEST	REPORT   Sample   TEST_CODE_SW8010	LAB # 86-01-205 NAME GC-HECD Haloo, Vol SW846
= 5	יר זה מממפב		Date & Time Co	te & Time Collected 01/26/86	Category
CONC.	DATA FILE CONC. FACTOR	G DATE I	DATE INJECTED <u>01/29/86</u>	ANALYST	VERIFIED BY MCL Q COMPOUNDS DETECTED 0
	SCAN	COMPOUND	RESULT	SCAN	COMPOUND
	ļ	Chloro	Chloromethane ND		Trichloroethene ND
	ļ	Втомо	Bromomethane ND		Dibromoch loromethane ND
		Vinyl C	Vinyl Chloride ND		1, 1, 2-Trichloroethane ND
		Ch lor	Chloroethane ND		cis-1,3-Dichloropropene ND
		Methylene Chloride	hloride ND		2-Chloroethylvinyl Ether ND
7		Trichlorofluoromethane	methane ND		Bromoform ND
0		1,1-Dichloroeth	oethene ND		1, 1, 2, 2-Tetrachloroethane ND
19		1,1-Dichloroethane	oethane ND		Tetrachloroethylene ND
		trans-1, 2-Dichloroeth	oethene ND		Chlorobenzene ND
		Ch 1	Chloroform ND	1	1, 3-Dichlorobenzene ND
		1,2-Dichloroethane	oethane ND		1,2-Dichlorobenzene ND
		1, 1, 1—Trichloroethane	oethane ND		1, 4-Dichlorobenzene ND
		Carbon Tetrachlori	hloride ND		
		Bromodichloromethane	methane ND		
		1, 2-Dichloropropane	propane ND		
		trans-1,3-Dichloropropene	propene ND		

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PAGE 20 RECEIVED: 01/28/86

Analytical Serv REPORT Results by Sample

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LAB # 86-01-205 Continued From Above

SAMPLE 1D 860022

FRACTION 11B TEST CODE SW8010 Date & Time Collected 01/26/86

NAME GC-HECD Halog. Vol. - SW846 Category

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in <u>uq/kq</u> unless otherwise specified

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified

	Vol SW846	ED BY MCL ECTED 0	RESULT	Q	Q	Q
LAB # 86-01-205	NAME GC-PID Arom. V. Category	MCL VERIFIED BY  d COMPOUNDS DETECTED	COMPOUND	1,3-Dichlorobenzene	1,2-Dichlorobenzene	1, 4-Dichlorobenzene
REPORT Sample	ACTION 11C TEST CODE SW8020 N te & Time Collected 01/26/86	ANALYST	SCAN			
Serv Results by Sample	ACTION 11C te & Time Col	TED <u>01/31/86</u>	RESULT	 Q	<b>Q</b>	Q
Analytical Se Re	FRACTI Date 8	D DATE INJECTED	COMPOUND	Ben zene	Toluene	Ethyl Benzene
PAGE 21 RECEIVED: 01/28/86	SAMPLE 10 860022	DATA FILE CONC. FACTOR	SCAN		7 021	

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SCAN = scan number or retention time on chromatogram. NOTES AND DEFINITIONS FOR THIS REPORT.

1 ug/kg, unless otherwise specified. uq/kq unless otherwise specified. All results reported in  $\frac{\log/kq}{\log r}$  unless ND = not detected at detection limit of

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LAB # 86-01-205

REPORT

Analytical Serv

Results by Sample

RECEIVED: 01/28/86

PAGE 22

NAME GC-HECD Halog. Vol. - SW846 VERIFIED BY MCL COMPOUNDS DETECTED 2 Trichloroethene 64.8 N 2 윋 윋 皇 뮏 月 윋 윋 일 일 RESULT Bromoform cis-1, 3-Dichloropropene 2-Chloroethylvinyl Ether Chlorobenzene 1, 2-Dichlorobenzene Dibromoch lorome thane 1, 1, 2-Trichloroethane 1, 1, 2, 2-Tetrachloroethane Tetrach loroethy lene 1, 3-Dichlorobenzene 1, 4-Dichlorobenzene Category COMPOUND RP TEST CODE SWB010 Date & Time Collected 01/21/86 ANALYST INSTRUMENT SCAN DATE INJECTED 01/29/84 FRACTION 12B 月 2 윋 月 윋 2 2 밁 月 윋 뫼 윋 욷 RESULT 9 39. 1 Chloromethane trans-1, 3-Dichloropropene Bromomethane Vinyl Chloride Chloroethane Methylene Chloride Trichlorofluoromethane 1, 1-Dichloroethane trans-1, 2-Dichloroethene Chloroform 1,2-Dichloroethane Bromodich loromethane 1, 1-Dichloroethene 1, 1, 1-Trichloroethane Carbon Tetrachloride 1,2-Dichloropropane COMPOUND 0 SAMPLE 1D 860004 DATA FILE FACTOR SCAN CONC 022

LAB # 86-01-205 Continued From Above	FRACTION 12B TEST CODE SW8010 NAME GC-HECD Haloq. Vol Date & Time Collected 01/21/86
REPURI Sample	TEST CODE SWB01
Analytical Serv REPUM Results by Sample	FRACTION 12B Date & Time Co
PAGE 23 RECEIVED: 01/28/86	SAMPLE ID 860004

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NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in <u>ug/kg</u> unless otherwise specified.

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified.

	Vol SW846	ED BY MCL ECTED O	RESULT	Q	Q	Q
LAB # 86-01-205	NAME GC-PID Arom. Ve	MCL VERIFIED BY  d COMPOUNDS DETECTED	COMPOUND	1,3-Dichlorobenzene	1,2-Dichlorobenzene	1, 4-Dichlorobenzene
REPORT Sample	FRACTION 12C TEST CODE SW8020 Date & Time Collected 01/21/86	ANALYST INSTRUMENT	SCAN			
Serv Results by Sample	FION 12C	01/31/86	RESULT	 Q	 Q	QN
Analytical S	FRAC	D DATE INJECTED 01/31/86	COMPOUND	Benzene	Toluene	Ethyl Benzene
PAGE 24 RECEIVED: 01/28/86	SAMPLE ID 860004	DATA FILE CONC. FACTOR	SCAN		7 024	

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SCAN = scan number or retention time on chromatogram. NOTES AND DEFINITIONS FOR THIS REPORT.

uq/kq unless otherwise specified. ND = not detected at detection limit of All results reported in \_\_\_

1 ug/kg, unless otherwise specified

Results by S Results by S RACTION 13B Date & Time Coll Date Date Date Date Date Date Date Date	LAB # 86-01-205	TEST CODE SW8010 NAME GC-HECD Halog. Vol SW846 ected 01/21/86	ANALYST RP VERIFIED BY MCL INSTRUMENT Q COMPOUNDS DETECTED 2	A COMPOUND RESULT	2 Trichloroethene 174	Dibromochloromethane ND	1,1,2-Trichloroethane ND	cis-1,3-Dichloropropene ND	2-Chloroethylvinyl Ether ND	Bromoform ND	1, 1, 2, 2-Tetrachloroethane ND	Tetrachloroethylene ND	Chlorobenzene ND	1,3-Dichlorobenzene ND	1,2-Dichlorobenzene ND	1,4-Dichlorobenzene ND			•	
GOMPO  COMPO  Trichloro  Trichloro  1,1-D  1,1-D  1,1-Tr  Carbon  Bromodi  1,2-Di  1,2-Di		FRACTION 13B TEST CODE SW80 Date & Time Collected 01/21/86		RESULT	ne n	ae -	de		de e				İ				e e			ropropene ND:
	PAGE 25 RECEIVED: 01/28/86	SAMPLE ID 860005		SCAN COMPOUND	Ch1or	Bron	Vinyl	Chic	Methylene	Trichlorofluo	1, 1-Dichl	1, 1-Dich1	1 trans-1, 2-Dichl	-	1, 2-Dich1	1, 1, 1-Trichl	Carbon Tetr	Bromodichlo.	1, 2-Dichlo	trans-1, 3-Dichloropropene

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Analytical Serv REPORT Results by Sample

LAB # 86-01-205

Continued From Above

SAMPLE ID 860005

FRACTION 13B TEST CODE SW8010 NAME GC-HECD Halog. Vol. - SW846 Date & Time Collected 01/21/86 Category

NOTES AND DEFINITIONS FOR THIS REPORT

SCAN ≈ scan number or retention time on chromatogram.

All results reported in <u>uq/kq</u> unless otherwise specified

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified.

Vol SWB46	VERIFIED BY MCL DS DETECTED 0	RESULT	e ND	e ND	QN eu	
ACTION 13C TEST CODE SW8020 NAME GC-PID Arom. Vol SW846 te & Time Collected 01/21/86	MCL VERIFIED BY d COMPOUNDS DETECTED	COMPOUND	1,3-Dichlorobenzene	1,2-Dichlorobenzene	1,4-Dichlorobenzene	
ACTION 13C TEST CODE SW8020 te & Time Collected 01/21/86	ANALYST	SCAN				
FRACTION 13C Date & Time Coll	NJECTED <u>01/31/86</u>	RESULT	QN	Q	ne ND	
	DATE INJECT	COMPOUND	Benzene	Toluene	Ethyl Benzene	
SAMPLE 1D 860005	DATA FILE	SCAN		7 02	7	

Analytical Serv REPORT Results by Sample

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LAB # 86-01-205

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN ≈ scan number or retention time on chromatogram.

ND = not detected at detection limit of 1 ug/kg, unless otherwise specified. All results reported in <u>uq/kq</u> unless otherwise specified

NAME Xylenes Category	VERIFIED BY MCL COMPOUNDS DETECTED 0				
NAME	RP				
FRACTION 14B TEST CODE XYLENE Date & Time Collected 01/26/86	ANALYST				
FRACTION 14B Date & Time Col	DATE INJECTED <u>01/31/86</u>	RESULT	QN	Q	QN
	DATE	COMPOUND	p-xylene	m-xylene	o-xylene
SAMPLE ID 860019	DATA FILE D	SCAN		7 028	

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Serv REPORT

Analytical Serv

RECEIVED: 01/28/86

PAGE 28

LAB # 86-01-205

NOTES AND DEFINITIONS FOR THIS REPORT.

All results reported in <u>ug/kg</u> unless otherwise specified SCAN = scan number or retention time on chromatogram.

ND = not detected.

		VERIFIED BY MCL DS DETECTED 0				
LAB # 86-01-205	Xylenes Category	VERIFIED BY COMPOUNDS DETECTED				
	NAME	7 P				
REPORT Sample	FRACTION 15B TEST CODE XYLENE NAME Xylenes Date & Time Collected 01/26/86	ANALYST				
Analytical Serv Results by Sample	FRACTION 15B Date & Time Col	DATE INJECTED <u>01/31/86</u>	RESULT	 QN	Q	Q
Anal		DATE	COMPOUND	p-xylene	m-xylene	o-xylene
PAGE 29 RECEIVED: 01/28/86	SAMPLE ID 860021	DATA FILE D	SCAN			
₫ ፸	ហ៊	ฉี			7 029	

NOTES AND DEFINITIONS FOR THIS REPORT.

ug/kg unless otherwise specified. SCAN = scan number or retention time on chromatogram. All results reported in  $\frac{19/kq}{r}$  unless otherwise speND = not detected.

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FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE PAGE 30 RECEIVED: 01/28/86 DUP\_NS 130

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PAGE 1

LAB # 86-01-206

REPORT

Analytical Serv

specific matrix was not within acceptable limits indicating \* Indicates a value less than 5 times the detection limit CONTACT CONOVER @ Indicates that spike recovery for this analysis on the CERTIFIED BY Analytical Serv TEST CODES and NAMES used on this report Potential error for such low values ranges between Services Footnotes and Comments Duplicate of report of 03/31/86 Austin, Texas 78766 PREPARED Radian Analytical RCRA Extraction Procedure Digestion by Method 3020 Digestion by Method 6010 8501 MoPac Blvd (512) 454-4797 P. O. Box 9948 an interferent present. Mercury, Cold Vapor [anitability-solids 09/08/86 11: 52: 54 Selenium, low level Arsenic, low level Chromium, ICPES Lead, low level Cadmium, ICPES Barium, ICPES Silver, ICPES 50 and 100% PHONE ATTEN IGNITS 063020 066010 EP EXT PB GA AG E AS GA HG CA SE GA BA E E CD CR E Dynamics) SAMPLES WORK ID soils, EP tox and ignit AFB (Gen. SAMPLE IDENTIFICATION 212-027-27-40 ATTEN Larry French RECEIVED: 01/28/86 Carswell Plant 4 REPORT Radian Austin PLANT4 7619 TAKEN PAW TRANS PAW 800098 860015 860018 860006 860010 860020 860007 860023 FACILITY **CLIENT** COMPANY INC 031

PAGE 2 RECEIVED: 01/28/86

Analytical Serv REPORT RESULTS BY TEST

LAB # 86-01-206

e n t	ample 02 Sample 03 Sample 04 Sample 05 ered units) (entered units)	0.015 0.019 0.027 0.017	€. 003 €. 003 €. 003	0.12 0.23 0.046 0.15	0.007* 0.005* <.002 <.002	0.012* 0.009* 0.018* 0.016*	98/90/20 98/90/20 98/90/20 98/90/89	3/86 03/13/86 03/13/86 03/13/86	5/86 02/25/86 02/25/86 02/25/86	0.0004* <.0002 <.0002 0.0002*	סט טט סט סט	0.006 0.003* 0.002* 0.009	£003
3	ts) (ent	0.023	<. 003	0. 20	<. 002	0.020*				<. 0002	по	0.006	( 003

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LAB # 86-01-206													
REPORT Test	Sample <u>OB</u>	0.017	₹. 003	0.30	0.005*	0.016*	03/09/86	03/13/86	02/25/86	<. 0002	οu	0.006	<. 003
l Serv RESULTS BY	Sample 07 (entered units)	0.002*	₹. 003	0.031	0.004*	<. 005	03/06/86	03/13/86	02/25/86	₹. 0002	ou	0.007	<. 003
Analytica	Sample 06 (entered units)	0.018	<. 003	0.25	0.003*	0.013*	03/06/86	03/13/86	02/25/86	₹. 0002	υu	0.010	<. 003
PAGE 3 RECEIVED: 01/28/86	TEST CODE	AG_E	AS_GA			1 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	S D63020	DG6010	><	HG CA	IGNITS	PB GA	SE GA

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LAB # 86-03-008	CERTIFIED BY  CONTACT CONDVER	of 05/12/86. ses and Comments less than 5 times the detection limit such low values ranges between	this analysis on the ptable limits indicating on this report
cal Serv REPORT 09/08/86 11:53:53	PREPARED <u>Radian Analytical Services</u> BY <u>8501 MoPac Blvd.</u> P. O. Box 9948 Austin, Texas 78766 ATTEN PHONE (512) 454-4797	Duplicate of report of 05/12/86.  Footnotes and Comments  * Indicates a value less than 5 times the detection limit Potential error for such low values ranges between 50 and 100%.	e Indicates that spike recovery for this analysis on the specific matrix was not within acceptable limits indicat an interferent present.  Analytical Serv TEST CODES and NAMES USed on this report EP EXT RCRA Extraction Procedure EP MET RCRA Metals IGNITS Ignitability—solids
PAGE 1 RECEIVED: 03/03/86	EPORT Radian TO B1. 4 Austin ATTEN Larry French MPANY Plant 4 ILITY Carswell AFB (Gen. Dynamics)	EP and ignitability PAW PAW 212-027-27-40 7891	IDENTIFICATION
PAGE 1 RECEIVED:	REPORT TO ATTEN CLIENT COMPANY FACILITY	MORK ID TAKEN TRANS TYPE P. O. *	20058 50 034 034

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PAGE 2 RECEIVED: 03/03/86	Analy	Analytical Serv RESULTS BY TEST	REPORT Test	LAB # 86-03-008
TEST CODE	Sample 01 Samp	Sample 02 (entered units)		
	03/25/86	03/25/86		
I IGNITS	υ <b>0</b>	υu		

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Serv REPORT Results by Sample Analytical Serv

LAB # 86-03-008

SAMPLE 1D 860025

FRACTION OIC TEST CODE EP MET Date & Time Collected 02/28/86

Category NAME RCRA Metals

DATE ANALYZED 04/25/86

VERIFIED BY GCL

	Mercury Lead Selenium	H H B SE	3. 2	Barium Cadmium Chromium	BA CD CR
	Arsenic	AS	0.039	Silver	AG
Œ	METAL	CODE	RESULT	METAL	CODE

0.18

2.1

1.6

RESULT

3.7

NOTES AND DEFINITIONS FOR THIS REPORT

unless otherwise specified. NA = not analyzed All results reported in <u>uq/ml</u>

All elements determined by ICPES except Hg. \* = less that 5 times the detection limit.

Analytical Serv

REPORT Results by Sample

LAB # 86-03-008

RECEIVED: 03/03/86

SAMPLE 1D 860026

NAME RCRA Metals FRACTION O2C TEST CODE EP MET Date & Time Collected 02/28/86

DATE ANALYZED 04/25/86

VERIFIED BY GCL

Category

	!		!
METAL	Arsenic	Mercury	Lead
CODE	<b>∀</b> S	H	PB
RESULT	0.014	0.72	0.077
METAL	Silver	Barium	Cadmium
CODE	AG	BA	CD

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RESULT

0.10

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Selenium

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0.017\*

Chromium

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NOTES AND DEFINITIONS FOR THIS REPORT

unless otherwise specified. All elements determined by ICPES except Hg. \* = less that 5 times the detection limit. NA = not analyzed All results reported in ug/ml

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PREPARED Radian Analytic By 12/18/86 14:23:18  PREPARED Radian Analytic By 9501 MoPac Blvg 948  PREPARED Radian Analytic By 9501 MoPac Blvg 948  Austin, Texas Anter By 9501 MoPac Blvg 948  Austin, Texas Anter By 9501 MoPac Blvg 948  Austin, Texas Anter By 9501 MoPac Blvg 948  PHONE (512) 454-4797  PHONE (512) 454-479  PHONE (512) 454-479  PHONE (512) 454-479  PHONE (512)	LAB # 86-03-021	CERTIFIED BY	CONTACT FRENCH	Comments	times the detection limit. Nues ranges between	ecovery for this analysis on the within acceptable limits indicating	used on this report
Pration SAMPLE SAMPLE Winamics Et 4, Bldq 4 Exas Sample Soil	al Serv REPORT 12/18/86 14:23:18	PREPARED Radian Analytical Server BY 8501 MoPac Blvd. P. O. Box 9948 ATTEN	1 -1	Footnotes and	* Indicates a value less than Potential error for such low version and 100%.	@ Indicates that spike recoverespecific matrix was not within an interferent present.	tical Serv TEST CODES and NAMES Extraction only - 625 BN/A Screen by IFB method A Method 625 Acid Compounds B Method 625 Base/Neutrals B Pesticides & PCBs by GC/MS O GCMS Volatiles - SW846
RECEIVED: 0 REPORT RA REPORT RA ATTEN CLIENT PL COMPANY GE TAKEN Z/ TAKEN Z	PAGE 1 RECEIVED: 03/04/86	Radian Corporation Larry French Austin, Texas	PLANT 4 SAMPLES General Dynamics OEHL Plant 4, Bldg 4 Austin, Texas	Plant 4 2/28/86 and	NS Fed Ex PE H20 and # 212-027 # 7678		IDENTIFICATION H20 H20 H20 H20 H20 H20 VQA Soil E Blank

PAGE 2 RECEIVED: 03/04/86

Analytical Serv REPORT RESULIS BY TEST

LAB # 86-03-021

TEST CODE	Sample 01 (entered units)	Sample 02 (entered units)	Sample 02 Sample 03 Sample 04 Sample 05 entered units) (entered units)	Sample 04 (entered units)	Sample 05 (entered unit
EX 625 date complete	03/02/86	03/02/86	03/02/86	03/02/86	03/05/86
TEST CODE default units	Sample 06	Sample 07 (entered units)			
IFB_VS date_complete	98/90/60	98/90/60			

PAGE 3 RECEIVED: 03/04/86

REPORT Results by Sample Analytical Serv

LAB # 86-03-021

SCARCE MERCENCOMMENCE SERVICE 
SAMPLE 1D 860213 H20

FRACTION 01A TEST CODE M625 A NAME Method 625 Acid Compounds Date & Time Collected 03/01/86 Category

Category

DATA FILE <u>5CU03021C01</u>

DATE EXTRACTED 03/05/86 DATE INJECTED 03/24/86

INSTRUMENT **ANALYST** 

ιυ	ď	4	æ	,
NPDE	7A	5A	4 4	9.4
RESULT NPDES	QN	QN	S	Q
COMPOUND	2, 4, 6-trichlorophenol	4-chloro-3-methylphenol	2-chlorophenol	2, 4-dichlorophenol
EPA	21A	22A	24A	31A
NPDES SCAN				
DES	11A	84	1 A	24
S D			<b>7</b> %%	(
		) (C)		<u> </u>

MJL 5100

7 VERIFIED BY COMPOUNDS DETECTED Э

4-nitrophenol

RESULT

COMPOUND

EPA

SCAN

**58A** 

**59A** 

빌

2, 4-dinitrophenol

밀

2-methyl-4, 6-dinitrophenol

**60A** 

64A

**65A** 

10A

9

2,4-dimethylphenol

34A

4

**6**A

2

2-nitrophenol

SULT

65

일

pentachlorophenol

빌

phenol

SURROGATE RECOVERIES

COMPOUND	d5-phenol_	2-fluorophenol_	2, 4, 6-tribromophenol_	d3-phenol
CODE	AS1	AS2	A53	AS4
SCAN CODE	375	270	971	

AND DEFINITIONS FOR THIS REPORT. NOTES

ug/l unless otherwise specified SCAN = scan number or retention time on chromatogram All results reported in

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PAGE 4 RECEIVED: 03/04/86

REPORT Results by Sample Analytical Serv

LAB # 86-03-021 Continued From Above

SAMPLE ID 860213 H20

FRACTION 01A TEST CODE M625 A NAME Method 625 Acid Compounds Date & Time Collected 03/01/86

Category

Minimum detection

ND = not detected at EPA detection limit method 625, (Federal Register, 11/26/84). BL = detected in reagent blank; background subtraction not performed

J = estimated value; less than method detection limit. CONC. FACTOR:

indicates dilution of sample if greater than one (1). limits should be multiplied by conc. factor.

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CORPORATION	

LAB # 86-03-021	NAME Method 625 Base/Neutrals Category	WJL VERIFIED BY LAK 5100 COMPOUNDS DETECTED 0	COMPOUND	N-nitrosodimethylamine NE	N-nitrosodiphenylamine NE	N-nitrosodi-n-propylamine ME	bis(2-ethylhexyl)phthalate MD	butyl benzyl phthalate MD	di-butyl phthalate ND	di-n-octyl phthalate ND	diethyl phthalate NE	dimethyl phthalate MD	benzo(a)anthracene A ND	benzo(a)pyrene NE	benzo(b)fluoranthene *ND	benzo(k)fluoranthene *ND	chrysene A NE	acenaphthylene MD	
IRT	TEST CODE M625 B Collected 03/01/86	ANALYST INSTRUMENT 51	SCAN EPA	61B	829	-N 8E9	66B bis	878	889	849	70B	71B	728	73B	748	75B	768	778	700
REPORT Sample	TEST C llected	INS	NPDES SC	418	43B	42B	138	158	26B	298	24B	258	58	<b>6</b> B	78	98	188	2B	C
Serv Results by	RACTION O1A ate & lime Co	03/05/86 03/24/86	RESULT	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	2
Analytical Se Re	FRACTI Date &	DATE EXTRACTED DATE INJECTED	COMPOUND	acenaphthene	benzidine	1, 2, 4-trichlorobenzene	hexachlorobenzene	hexachloroethane	bis(2-chloroethyl)ether	2-chloronaphthalene	1, 2-dichlorobenzene	1, 3-dichlorobenzene	1, 4-dichlorobenzene	3,3'dıchlorobenzidine	2,4-dinitrotoluene	2,6-dinitrotoluene	1,2-diphenylhydrazine	fluoranthene	10 11 11 11 11 11 11 11 11 11 11 11 11 1
04/86	1213 H20	50003021001	EPA	18	5.8	83 1, 2,	98	12B	18B bis(	20B	25B	26B	27B	28B 3, 3	35B	368	37B 1.8	398	408 4-ch   crockern
PAGE 5 RECEIVED: 03/04/86	SAMPLE 1D 860213 H20	DATA FILE CONC. FACTOR	NPDES SCAN E	18	48	46B	338	36B 1:	7	16B	z 802 <b>42</b>	21B 2	22B 2	238 2	27B 3	288 3	298 3	318 3	178

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PAGE 6 RECEIVED:	03/04/86		Analytical Serv Results by Sample	REPORT J Sample	RT	LAB # 86-03-021 Continued From Above
SAMPLE 1D 860213 H20	860213	H20	FRACTION O1A TEST CODE M625 Date & Time Collected 03/01/86	TEST Collected	TEST CODE M625 B ected 03/01/86	NAME Method 625 Base/Neutrals Category
148	41B	4-bromophenyl phenyl	ether ND	88	79B	benzo(ghi)perylene NE
12B	42B b	bis(2-chloroisopropyl)e	)ether ND	32B	BOB	fluorene MB
108	43B	bis(2-chloroethoxy)methane	nethane ND	448	818	phenanthrene B NE
348	52B	hexachlorobutad	adiene ND	198	828	dibenzo(a,h)anthracene MD
358	53B	hexachlorocyclopentad	adiene ND	378	838	indeno(1, 2, 3-cd)pyrene MD
388	24B	isopho	horone ND	45B	848	pyrene NE
39B	55B	naphtha	chalene ND			
40B	26B	nitroben	ND National			
SURROGATE	RECOVERIES	IES				

RESULT	d5-nitrobenzene 39	2-fluorobiphenyl 36	d14-terphenyl 53	d10-biphenyl
SCAN CODE	493 BS1	750 BS2	1328 BS3	BS4
	7	7 0	43	

NOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at EPA detection limit method 625, (Federal Register, 10/26/84). = benzo(a)anthracene and chrysene co-elute in high concentrations. All results reported in ug/1 unless otherwise specified.  $\star$  = benzo(b)fluoranthene and benzo(k)fluoranthene co-elute. SCAN = scan number or retention time on chromatogram.

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Results by Sample Analytical Serv

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LAB # 86-03-021 Continued From Above

SAMPLE ID 860213 H20

FRACTION OIA TEST CODE M625 B Date & Time Collected 03/01/86

NAME Method 625 Base/Neutrals

Category

= detected in reagent blank; background subtraction not performed B = anthracene and phenanthrene co-elute in high concentrations.

Minimum detection CONC. FACTOR: indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. limits should be multiplied by conc. factor.

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PAGE 8 RECEIVED: 03/04/86

SAMPLE ID 860213 H20

Serv REPORT Results by Sample Analytical Serv

LAB # 86-03-021

FRACTION 01A TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected 03/01/86

ANALYST DATE EXTRACTED 03/05/86
DATE INJECTED 03/24/86 DATA FILE SCU03021C01

COMPOUNDS DETECTED OF LAK

UND RESULT	alpha BHC NB	beta BHC NE	gamma BHC ND	delta BHC NE	PCB-1242 NB	PCB-1254 ND	PCB-1221 NB	PCB-1232 NE	PCB-1248 ND	PCB-1260 ND	PCB-1016 NE	toxaphene ME	
ЕРА СОМРОUND	102P	103P	104P	105P	106P	107P	108P	109P	110P	111P	112P	113P	
NPDES SCAN	2P 1	36	4P 1	5P 1	18P 1	199 1	20P 1	1 21P 1	; 22P 1	: 23P 1	24P 1	. 25P 1	
RESULT	QN	QN	ND	T ND	QN	QN	ON	QN	QN	QN	ND	QN	QN
	dri	drin	, dan	.da-,	-ppe		ılfan	ılfan	fate	ıdrin	a p ń q e	hlor	oxide
COMPOUND	aldrin	dieldrin	chlordane	4, 4'-DDT	4, 4'-DDE	4, 4'-DDD	alpha endosulfan	beta endosulfan	endosulfan sulfate	endrin	endrin aldehyde	heptachlor	heptachlor epoxide
NPDES SCAN EPA COMPOUND	89P aldri	90P dieldrin	91P chlordan	92P 4,4'-DD	93P 4,4'-DDE	94P 4,4'-DDD	endosul	endosul	sulf	98P endrin	99P endrin aldehyde	100P heptachlor	x o d a

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Analytical Serv

LAB # 86-03-021 Continued From Above

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PLF ID 840213 H2

1D 860213 H20

FRACTION O1A TEST CODE MS 608 Date & Time Collected 03/01/86

NAME Pesticides & PCBs by GC/MS Category

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number on chromatogram.

All results reported in micrograms/liter unless otherwise specified.

ND = not detected at EPA detection limit method 625, (Federal Register, 12/3/79)

	03/04/86
PAGE 10	RECEIVED:

REPORT Results by Sample Analytical Serv

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LAB # 86-03-021

SAMPLE ID 860214 H2D

FRACTION OZA TEST CODE M625 A NAME Method 625 Acid Compounds Date & Time Collected 03/01/86

Category

5CU3021C02 DATA FILE CONC. FACTOR

DATE EXTRACTED 03/05/86
DATE INJECTED 03/24/86

INSTRUMENT ANALYST

5100

VERIFIED BY LAM COMPOUNDS DETECTED 7

RESULT

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NPDES	ES SCAN	EPA	COMPOUND	RESULT	NPDES SCAN	EPA	COMPOUND
#	114	21A	2, 4, 6-trichlorophenol	QN	7. 7A	58 <b>A</b>	4-nitrophenol
	84	22A	4-chlaro-3-methylphenol	Q	Ψ. T.	59A	2,4-dinitrophenol
7	18	24A	2-chlorophenol	QN	4 4	<b>60A</b>	2-methyl-4, &-dinitrophenol
04	2A	31A	2,4-dichlorophenol	N	44 4	64A	pentachlorophenol
	94	34A	2,4-dimethylphenol	Q N	10A	65A	phenol
-	6A	57A	2-nitrophenol	QN	•• ••		

SURROGATE RECOVERIES

RESULT	d5-phenol 63	2-fluorophenol 69	mophenol 83	d3-phenol
COMPOUND	7	2-fluo	2, 4, 6-tribromophenol	P
SCAN CODE	37 <u>6</u> AS1	272 AS2	972 AS3	AS4

SCAN = scan number or retention time on chromatogram. AND DEFINITIONS FOR THIS REPORT. All results reported in NOTES

ug/l unless otherwise specified

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Analytical Serv

REPORT Results by Sample

LAB # 86-03-021 Continued From Above

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SAMPLE 1D 860214 H20

FRACTION OZA TEST CODE M625 A NAME Nethod 625 Acid Compounds Date & Time Collected 03/01/86

Minimum detection ND = not detected at EPA detection limit method 625, (Federal Register, 11/26/84). BL = detected in reagent blank; background subtraction not performed. indicates dilution of sample if greater than one (1). value; less than method detection limit. limits should be multiplied by conc. factor. J = estimated CONC. FACTOR:

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LAB # 86-03-021	B NAME Method 625 Base/Neutrals Category	WUL VERIFIED BY LAM 5100 COMPOUNDS DETECTED O	COMPOUND	N-nitrosodimethylamine NE	N-nitrosodiphenylamine MD	N-nitrosodi-n-propylamine NS	bis(2-ethylhexyl)phthalate NE	butyl benzyl phthalate ND	di-butyl phthalate NE	di-n-octyl phthalate NE	diethyl phthalate NE	dimethyl phthalate NE	benzo(a)anthracene A NB	benzo(a)pyrene	benzo(b)fluoranthene * NE	benzo(k)fluoranthene * NE	chrysene A NE	acenaphthylene ND	anthracene B <u>NB</u>
IRT	CODE M625 03/01/86	ANALYST INSTRUMENT	SCAN EPA	618	62B	<b>8</b> E9	66B	67B	<b>889</b>	849	708	718	72B	738	74B	758	768	778	788
REPORT   Sample	Collected		NPDES SC	41B	43B	42B	138	15B	26B	298	24B	258	58	<b>89</b>	78	98	183	28	3B
Serv Results by	ACTION O2A te & lime Co	03/05/86 03/24/86	RESULT	QN	Q	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN
Analytical So	FRACT Date	DATE EXTRACTED DATE INJECTED	COMPOUND	acenaphthene	benzidine	1,2,4-trichlorobenzene	hexachlorobenzene	hexachloroethane	bis(2-chloroethyl)ether	2-chloronaphthalene	1, 2-dichlorobenzene	3-dichlorobenzene	1, 4-dichlorobenzene	3,3'dichlorobenzidine	2,4-dinitrotoluene	2, 6-dinitrotoluene	1,2-diphenylhydrazine	fluoranthene	enyl phenyl ether
98/	4 H20	5CU03021C02								,	1,	1,	, ,	3, 3,	( u	(u	1,2		4-chlorophenyl
03/04/86	0 86021		AN EPA	18	5B	8B	98	12B	188	20B	258	268	278	28B	35B	358	378	39B	40B
PAGE 12 RECEIVED:	SAMPLE 10 860214 H20	DATA FILE CONC. FACTOR	NPDES SCAN	118	4 B	46B	338	36B	7	0 16B	goz <b>49</b>	218	228	238	27B	288	29B	318	178

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492       BS1       d5-nitrobenzene       57         0       751       BS2       2-fluorobiphenyl       56         0       972       BS3       d14-terphenyl       71
751 BS2 2-fluorobiphenyl 972 BS3 d14-terphenyl

NOTES AND DEFINITIONS FOR THIS REPORT

d10-biphenyl

BS4

ND = not detected at EPA detection limit method 625, (Federal Register, 10/26/84). ug/1 unless otherwise specified. \* = benzo(b) fluoranthene and benzo(k) fluoranthene co-elute. SCAN = scan number or retention time on chromatogram. All results reported in.

= benzo(a)anthracene and chrysene co-elute in high concentrations.

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Analytical Serv

Results by Sample

LAB # 86-03-021 Continued From Above

SAMPLE ID 860214 H20

860214 H20

FRACTION OZA TEST CODE M625 B Date & Time Collected 03/01/86

NAME Method 625 Base/Neutrals Category

Minimum detection = detected in reagent blank; background subtraction not performed indicates dilution of sample if greater than one (1).  $B\ =\ anthracene$  and phenanthrene co-elute in high concentrations. J = estimated value; less than method detection limit.

limits should be multiplied by conc. factor.

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RECEIVED: 03/04/86
SAMPLE ID 860214 H20
Bate & Time Collected 03/01/86
SAMPLE SAMPLE SAMPLE Catenoria

WUL VERIFIED BY LAK COMPOUNDS DETECTED O	COMPOUND	alpha BHC NB	beta BHC NB	gamma BHC NE	delta BHC ND	PCB-1242 NE	PCB-1254 NE	PCB-1221 NE	PCB-1232 NE	PCB-124B NE	PCB-1260 MB	PCB-1016 NE	toxaphene ND	
ANALYST	SCAN EPA	102P	103P	104P	105P	106P	107P	108P	109P	110P	1111	112P	1136	
	NPDES	2P	а́б	46	SP	18P	19P	20P	218	22P	23P	24P	25P	
03/05/86 03/24/86	RESULT	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN
DATE EXTRACTED DATE INJECTED	COMPOUND	aldrin	dieldrin	chlordane	4, 4'-DDT	4, 4'-DDE	4, 4'-DDD	alpha endosulfan	beta endosulfan	endosulfan sulfate	endrin	endrin aldehyde	heptachlor	heptachlor epoxide
DATA FILE <u>SCUO3O21CO2</u> C. FACTOR	EPA	89P	90P	916	92P	93P	94P	95P	96P	97P	486	d66	100P	101P
DATA CONC. F	NPDES SCAN	11	10P	<b>6</b> P	7P	Ֆ 7	ե 052	3 11P	12P	14P	14P	15P	16P	17P

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Analytical Serv REPORT Results by Sample

LAB # 86-03-021 Continued From Above

SAMPLE ID 860214 H20

FRACTION OZA TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected 03/01/86

NOTES

SCAN = scan number on chromatogram.

ND = not detected at EPA detection limit method 625, (Federal Register, All results reported in micrograms/liter unless otherwise specified.

AND DEFINITIONS FOR THIS REPORT.

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PAGE 17 RECEIVED: 03/04/86

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LAB # 86-03-021

SAMPLE ID 860215 H20

FRACTION 03A TEST CODE M625 A
Date & Time Collected 03/01/86

NAME Method 625 Acid Compounds Category

VERIFIED BY LAK IDS DETECTED O	RESULT	0.1	01 145	01 MD
COMPOUN	COMPOUND	4-nitrophenol	2,4-dinitrophenol	2-methyl-4, 6-dinitrophenol
5100				2-methy]
	EPA	58A	59A	60A
INS	RESULT NPDES SCAN	7A	5A	4
03/05/86 03/24/86	RESULT	UN lon	QN	Q
DATE EXTRACTED 03/05/86 DATE INJECTED 03/24/86	COMPOUND	2, 4, 6-trichlorophenol	4-chloro-3-methylphenol	2-chlorophenol
DATA FILE <u>5CU03021C03</u> IC. FACTOR 1	J	2,4	4-ch1	
200C	EPA	21A	22A	24A
DATA FILE CONC. FACTOR	SCAN			
DAT	NPDES SCAN	114	8 A	⊈ 7
es Section	Z 	<u>ፋ</u> ኒያለር የተ	JATA!	<b>7</b>

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pentachlorophenol

64A

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2, 4-dichlorophenol

31A

2A

054

34A

3A

**57A** 

**6**A

**65A** 

10A

밁

2,4-dimethylphenol

2

2-nitrophenol

2

phenol

## SURROGATE RECOVERIES

RESULT	d5-phenol 34	ophenol 52	ophenol 49	d3-pheno1
COMPOUND	45	2-fluorophenol	2, 4, 6-tribromophenol	69
SCAN CODE	376 AS1	270 AS2	972 AS3	AS4

ug/l unless otherwise specified SCAN = scan number or retention time on chromatogram AND DEFINITIONS FOR THIS REPORT. All results reported in NOTES

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Analytical Serv REPORT Results by Sample

LAB # 86-03-021 Continued From Above

SAMPLE ID 860215 H20

FRACTION 03A TEST CODE M625 A Date & Time Collected 03/01/86

NAME Method 625 Acid Compounds Category

Minimum detection ND = not detected at EPA detection limit method 625, (Federal Register, 11/26/84) = detected in reagent blank; background subtraction not performed indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. limits should be multiplied by conc. factor. CONC. FACTOR:

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PAGE 19 RECEIVED: 03/04/86	3/04/86		Analytical Se Re	Serv Results by	REPORT Sample		LAB # 86-03-021
SAMPLE ID 860215 H20	50215 H2	0	FRACTI Date 8	FRACTION 03A TEST C Date & Time Collected	TEST CODE	CODE M625 B 03/01/86	NAME Nethod 625 Base/Neutrals Category
DATA FILE CONC. FACTOR	5 5 C U O 3 O 2 1 C O 3 1		DATE EXTRACTED DATE INJECTED	03/05/86 03/24/86	INS	ANALYST TRUMENT	WJL VERIFIED BY LAM. 5100 COMPOUNDS DETECTED C
NPDES SCAN	EPA	COMPOUND	GNOC	RESULT	NPDES SCAN	EPA	COMPOUND
. 1B	18		acenaphthene	QN	418	61B	N-nitrosodimethylamine MD
4B	58		benzidine	QN	43B	62B	N nitrosodiphenylamine N
46B	88	1,2,4-tr	1, 2, 4-trichlorobenzene	QN	42B	8E9	N-nitrosodi-n-propylamine NE
338	98	h e x ¿	hexachlorobenzene	QN	138	66B I	bis(2-ethylhexyl)phthalate NE
368	12B	e e	hexachloroethane	QN	158	67B	butyl benzyl phthalate NE
<b>7</b> 118	188	bis(2-ch10	bis(2-chloroethyl)ether	Q	26B	<b>889</b>	di-butyl phthalate MB
0 16B	208	2-ch16	2-chloronaphthalene	QN	29B	869	di-n-octyl phthalate NB
<b>3</b> 508	25B	1,2-d1	1, 2-dichlorobenzene	QN	24B	70B	diethyl phthalate NE
218	26B	1,3-4;	3-dichlorobenzene	Q	25B	718	dimethyl phthalate ND
228	27B	1,4-4	1, 4-dichlorabenzene	QN	58	72B	benzo(a)anthracene A ME
238	288	3,3'dich	3'dichlorobenzidine	QN	<b>6</b> B	73B	benzo(a)pyrene NE
278	35B	2,4-	2,4-dinitrotoluene	QN	78	748	benzo(b)fluuranthene * MB
288	368	2, 6-(	2,6-dinitrotoluene	QN	9.8	758	benzo(k) fluoranthene * NE
298	37B	1,2-dipt	1,2-diphenylhydrazine	QN	188	768	chrysene A NE
318	39B		fluoranthene	QN	28	778	acenaphthylene MB
178	40B 4-c1	4chlorophenyl	l phenyl ether	QN	36	788	anthracene B <u>ND</u>

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REPORT y Sample	FRACTION 03A TEST CODE M625 B Date & Time Collected 03/01/86	8B 79B	32B 80B	44B 81B	19B 82B	37B 83B	45B 84B		•					
Analytical Serv Results by Sample	FRACTION 03A Date & Time Co	4-bromophenyl phenyl ether ND	bis(2-chloroisopropyl)ether ND	bis(2-chloroethoxy)methane ND	hexachlorobutadiene ND	hexachlorocyclopentadiene ND	i sophorone ND	naphthalene ND	nitrobenzene ND		RESULT	d5-nitrobenzene 14	2-fluorobiphenyl 32	d14-terphenyl 78
9	H20	4-brom	is(2-c	b i s (2·		hexa				IES				
PAGE 20 RECEIVED: 03/04/86	SAMPLE 1D 860215 H20	41B 4-brom	42B bis(2-c	43B bis(2	52B	53B hexa	54B	55B	268	SURROGATE RECOVERIES	SCAN CODE	497 BS1	751 BS2	1328 BS3

NOTES AND DEFINITIONS FOR THIS REPORT.

d10-biphenyl

BS4

ND = not detected at EPA detection limit method 625, (Federal Register, 10/26/84). = benzo(a)anthracene and chrysene co-elute in high concentrations. uq/l unless otherwise specified. \* = benzo(b)fluoranthene and benzo(k)fluoranthene co-elute. SCAN = scan number or retention time on chromatogram. All results reported in\_\_\_

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Results by Sample Analytical Serv

REPORT

LAB # 86-03-021 Continued From Above

SAMPLE 1D 860215 H20

FRACTION 03A TEST CODE M625 B Date & Time Collected 03/01/86

Category

NAME Method 625 Base/Neutrals

= detected in reagent blank; background subtraction not performed  $B = {\sf anthrace}$ ne and phenanthrene co-elute in high concentrations.

J = estimated value; less than method detection limit.

Minimum detection indicates dilution of sample if greater than one (1). limits should be multiplied by conc. factor. CONC. FACTOR:

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Analytical Serv REPORT Results by Sample

LAB # 86-03-021

SAMPLE ID 860215 H20

FRACTION 03A TEST CODE MS 608 Date & Time Collected 03/01/86

NAME Pesticides & PCBs by GC/MS Category

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XTRACTED <u>03/05/86</u> INJECTED <u>03/24/86</u>	RESULT	aldrin	dieldrin	hlordane	4, 4'-DDT	4, 4'-DDE	4, 4'-DDD	dosulfan	dosulfan	sulfate	endrin	aldehyde	ptachlor	epoxide
DATE E DATE	COMPOUND	TO.	die	ch10	4,4	4,4	4,4	alpha endos	beta endos	endosulfan su	<b>Q</b>	endrin ald	hepta	heptachlor ep
JR	EPA	89P	90P	91P	92P	93P	94P	95P	96Р	97P	9BP	999	100P	101P
DATA FILE CONC. FACTOR	NPDES SCAN	Δ.	D.	<b>Q.</b>	a.	<b>o</b> L	۵	<u>o</u>	<u>o</u> _	OL.	<b>Q</b> .	۵.	<b>a</b> .	<b>a</b> _
ATA F	لَيْا	1.P	10P	<b>6P</b>	7P	88	98	11P	12P	14P	14P	15P	16P	17P

PAGE 23 RECEIVED: 03/04/86

REPORT Results by Sample Analytical Serv

LAB # 86-03-021 Continued From Above

SAMPLE ID 860215 H20

FRACTION 03A TEST CODE MS 608 Date & Time Collected 03/01/86

NAME Pesticides & PCBs by GC/MS Category

NOTES

SCAN = scan number on chromatogram. AND DEFINITIONS FOR THIS REPORT.

ND = not detected at EPA detection limit method 625, (Federal Register, 12/3/79). All results reported in micrograms/liter unless otherwise specified.

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PAGE 24 RECEIVED: 03/04/86

REPORT Results by Sample Analytical Serv

LAB # 86-03-021

SAMPLE ID 860216 H20

FRACTION 04A TEST CODE M625 A NAME Method 625 Acid Compounds Date & Time Collected 03/01/86

VERIFIED BY LAK COMPOUNDS DETECTED 3 3 5100 INSTRUMENT DATE EXTRACTED 03/05/86
DATE INJECTED 03/24/86 DATA FILE SCU03021C04 CONC. FACTOR

RESULT	M	ND	ND D	N	ŭ.		
COMPOUND	4-nitrophenol	2, 4-dinitrophenol	2-methyl-4, 6-dinitrophenol	pentachlorophenol	phenol		
EPA	58A	59A	60A	64A	65A		
NPDES SCAN	7A	S.A.	4 A	9.A	10A		
RESULT	Q	QN	QN	QN	Q	Q	
COMPOUND	2, 4, 6-trichlorophenol	4-chloro-3-methylphenol	2-chlorophenol	2, 4-dichlorophenol	2, 4-dimethylphenol	2-nitrophenol	
EPA	21A	22A	24A	31A	34A	57A	
Ā							
NPDES SCAN	114	8 4	7	% 06	₩ T	6A	

## SURROGATE RECOVERIES

RESULT	d5-phenol 44	2-fluorophenol 53	2, 4, 6-tribromophenol 53	d3-phenol
COMPOUND				
CODE	AS1	AS2	A53	AS4
SCAN CODE	375	270	972	

AND DEFINITIONS FOR THIS REPORT NOTES

ug/l unless otherwise specified SCAN = scan number or retention time on chromatogram All results reported in

STATES AND THE PROPERTY OF THE

PAGE 25 RECEIVED: 03/04/86

Results by Sample Analytical Serv

REPORT

LAB # 86-03-021 Continued From Above

SAMPLE ID 860216 H20

NAME Method 625 Acid Compounds Category

FRACTION 04A TEST CODE M625 A
Date & Time Collected 03/01/86

ND = not detected at EPA detection limit method 625, (Federal Register, 11/26/84).

BL = detected in reagent blank; background subtraction not performed J = estimated value; less than method detection limit.

Minimum detection indicates dilution of sample if greater than one (1). limits should be multiplied by conc. factor.

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LAB # 86-03-021

REPORT

Analytical Serv

Results by Sample

Ž Ξ Ω Z Z 2 A A RESULT NAME Method 625 Base/Neutrals VERIFIED BY COMPOUNDS DETECTED N-nitrosodimethylamine N-nitrosodiphenylamine N-nitrosodi-n-propylamine bis(2-ethylhexyl)phthalate butyl benzyl phthalate di-butyl phthalate di-n-octyl phthalate J e diethyl phthalate dimethyl phthalate acenaphthylene benzo(a)pyrene benzo(a)anthracene benzo(b)fluoranthene benzo(k)fluoranthene chrysene anthracene Category COMPOUND 5100 FRACTION 04A TEST CODE M625 B Date & Time Collected 03/01/86 61B 62B **9E9** 66B 74B INSTRUMENT EPA 67B **889** 69B 70B 71B 72B 73B 75B 76B 77B 78B ANAL YST NPDES SCAN 43B 42B 13B 15B 26B 29B 25B 188 41B 24B **5B** 73 2B 3B **6B 9B** DATE EXTRACTED 03/05/86
DATE INJECTED 03/24/86 RESULT 2 2 2 2 2 2 S 밁 S S 욷 S 2 2 Q 밁 acenaphthene benzidine hexachlorobenzene hexachloroethane 2-chloronaphthalene 1, 2-dichlorobenzene 1, 3-dichlorobenzene 1, 4-dichlorobenzene 3, 3'dichlorobenzidine 2, 4-dinitrotoluene 2, 6-dinitrotoluene 1, 2-diphenylhydrazine fluoranthene 40B 4-chlorophenyl phenyl ether 1, 2, 4-trichlorobenzene bis(2-chloroethyl)ether COMPOUND DATA FILE SCU03021C04 SAMPLE 1D 860216 H20 EPA **5B** 88 12B 18B 20B 25B 26B 27B 28B 35B 35B 378 398 13 **9B** FACTOR NPDES SCAN **4**B 46B 33B 36B 11B 16B 20B 21B 22B 23B 27B 28B 29B 31B 17B CONC 1 B 063

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PROCESSES CONTRACTOR CONTRACTOR STREET, 
LAB # 86-03-021 Continued From Above	NAME Method 625 Base/Neutrals Category	benzo(ghi)perylene NE	fluorene NO	phenanthrene B ND	dibenzo(a,h)anthracene ND	indeno(1,2,3-cd)pyrene ND	byrene ND			
JRT	ACTION 04A TEST CODE M625 B ste & Time Collected 03/01/86	79B	808	818	828	838	848			
Serv REPORT Results by Sample	TEST ( llected	88	32B	44B	198	37B	45B			
ts by	AA CO		2	2	일	2	일	9	2	
> =	N C							Z	2	
Analytical Serv Resul	H. G	ether	ther	ane	hexachlorobutadiene	iene	isophorone	naphthalene N	nitrobenzene N	
Analytical	H. G	4-bromophenyl phenyl ether	bis(2-chloroisopropyl)ether	bis(2-chloroethoxy)methane	hexachlorobutadiene	hexachlorocyclopentadiene	isophorone	naphthalene	nitrobenzene	
PAGE 27 RECEIVED: 03/04/86 RECEIVED: 03/04/86	SAMPLE ID 860216 H20  Date & Time	ether	ther	ane	iene	iene	one	lene	tene	

### SURROGATE RECOVERIES

RESULT	d5-nitrobenzene 18	2-fluorobiphenyl 53	d14-terphenyl64	d10-bipheny1
SCAN CODE	491 BS1	750 BS2	1327 BS3	BS4
		7	06	4

# NOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at EPA detection limit method 625, (Federal Register, 10/26/84). \*= benzo(b)fluoranthene and benzo(k)fluoranthene co-elute. A = benzo(a)anthracene and chrysene co-elute in high concentrations. All results reported in <u>ug/l</u> unless otherwise specified. SCAN = scan number or retention time on chromatogram.

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Analytical Serv

Serv REPORT Results by Sample

LAB # 86-03-021 Continued From Above

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Category

NAME Method 625 Base/Neutrals

SAMPLE ID 860216 H20

FRACTION 04A TEST CODE M625 B Date & Time Collected 03/01/86

BL = detected in reagent blank; background subtraction not performed  $\mathsf{B} = \mathsf{anthracene}$  and phenanthrene co-elute in high concentrations.

J = estimated value; less than method detection limit.

Minimum detection indicates dilution of sample if greater than one (1). limits should be multiplied by conc. factor. CONC. FACTOR:

PAGE 29 RECEIVED: 03/04/86

REPORT Results by Sample Analytical Serv

LAB # 86-03-021

SAMPLE 1D 860216 H20

FRACTION 04A TEST CODE MS 608 Date & Time Collected 03/01/86

Category

NAME Pesticides & PCBs by GC/MS

DATE EXTRACTED 03/05/86
DATE INJECTED 03/24/86 DATA FILE <u>SCU03021C04</u> CONC. FACTOR

3 ANALYST

VERIFIED BY COMPOUNDS DETECTED

LAK

RESULT	C ND	C ND	C NE	C MD	Z ND	4 MD	1	2 145	B ND	ONO	9	e NE	
	alpha BHC	beta BHC	gamma BHC	delta BHC	PCB-1242	PCB-1254	PCB-1221	PCB-1232	PCB-1248	PCB-1260	PCB-1016	toxaphene	
COMPOUND													
EPA	102P	103P	104P	105P	106P	107P	108P	109P	110P	1111	112P	113P	
NPDES SCAN	SP	a E	46	SP	18P	199	20P	21P	22P	23P	24P	25P	
RESULT	Q	QN	QN	Q	QN	QN	QN	Q	QN	QN	QN	QN	QN
	aldrin	dieldrin	chlordane	4, 4'-DDT	4,4'-DDE	4,4'-DDD	endosulfan	endosulfan	an sulfate	endrin	endrin aldehyde	heptachlor	or epoxide
COMPOUND							alpha (	beta 6	endosulfan		endri	•	heptachlor
EPA	B9P	90P	916	92P	93P	94P	95P	496	97P	98P	d66	100P	101P
NPDES SCAN													

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PAGE 30 RECEIVED: 03/04/86

Analytical Serv REPORT Results by Sample

LAB # 86-03-021 Continued From Above

SAMPLE ID 860216 H20

FRACTION 04A TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected 03/01/86

AND DEFINITIONS FOR THIS REPORT NOTES SCAN = scan number on chromatogram.

All results reported in micrograms/liter unless otherwise specified

ND = not detected at EPA detection limit method 625, (Federal Register, 12/3/79).

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Serv REPORT Results by Sample Analytical Serv

LAB # 86-03-021

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RECEIVED: 03/04/86

SAMPLE ID Reagent Blank

FRACTION OSA TEST CODE M625 A NAME Method 625 Acid Compounds Date & Time Collected not specified Category

Category

DATA FILE 2CB03016C18 CONC. FACTOR

DATE EXTRACTED 03/05/86 DATE INJECTED 03/19/86

INSTRUMENT

VERIFIED BY LAK

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COMPOUN
EPA
SCAN
NPDES

F2

COMPOUNDS DETECTED

8	1	1	- 1	ı	1	
сомРасича	4-nitrophenol	2,4-dinitrophenol	2-methyl-4,6-dinitrophenol	pentachlorophenol	phenol	
EPA	58 <b>A</b>	59A	<b>60A</b>	64A	65A	
NPDES SCAN	7.4	5A	4 4	94 -	10A	
RESULT	QN	QN	QN	QN	QN	QN
COMPOUND	2, 4, 6-trichlorophenol	4-chloro-3-methylphenol	2-chlorophenol	2, 4-dichlorophenol	2,4-dimethylphenol	2-nitrophenol
EPA	21A	22A	24A	31A	34A	57A
S NPDES SCAN	1114	₩8	₹. <b>7</b>	% 0€	\ 8 8	<b>4</b> 9

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### SURROGATE RECOVERIES

SCAN CODE COMPOUND RESULT
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NOTES AND DEFINITIONS FOR THIS REPORT.

ug/l unless otherwise specified. SCAN = scan number or retention time on chromatogram. All results reported in

PAGE 32 RECEIVED: 03/04/86

Analytical Serv

REPORT Results by Sample

LAB # 86-03-021 Continued From Above

SAMPLE ID Resigent Blank

FRACTION 05A TEST CODE M625 A NAME Method 625 Acid Compounds

Date & Time Collected not specified

Category

ND = not detected at EPA detection limit method 625, (Federal Register, 11/26/84)

BL = detected in reagent blank; background subtraction not performed. J = estimated value; less than method detection limit.

Minimum detection indicates dilution of sample if greater than one (1). limits should be multiplied by conc. factor. CONC. FACTOR:

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Analytical Serv REPORT Results by Sample FRACTION 05A SAMPLE ID Reagent Blank PAGE 33 RECEIVED: 03/04/86

TEST CODE M625 B NAME Method 625 Base/Neutrals LAB # 86-03-021

ľ		Date	& Time Collected	llected not	1	specified Category
DATA FILE CONC. FACTOR	.E 2CB03016C18	DATE EXTRACTED DATE INJECTED	03/05/86 03/19/86	INS	ANALYST	WUL VERIFIED BY LAW F2 COMPOUNDS DETECTED 1
NPDES SCAN	EPA	COMPOUND	RESULT	NPDES SCAN	EPA	COMPOUND
18	18	acenaphthene	QN	41B	61B	N-nitrosodimethylamine NE
4B	58	benzidine	QN	43B	829	N-nitrosodiphenylamine MD
45B	8B 1	1, 2, 4-trichlorobenzene	QN	42B	63B	N-nitrosodi-n-propylamine MD
338	98	hexachlorobenzene	QN	138	66B	bis(2-ethylhexyl)phthalate ND
368	12B	hexachloroethane	QN	158	67B	butyl benzyl phthalate ND
118	18B bi	bis(2-chloroethyl)ether	QN	268 1328	<b>889</b>	di-butyl phthalate
168	208	2-chloronaphthalene	QN	298	869	di-n-octyl phthalate ME
20B	25B	1, 2-dichlorobenzene	QN	248	70B	diethyl phthalate MD
21B	26B	1, 3-dichlorobenzene	QN	258	718	dimethyl phthalate ND
822	278	1,4-dichlorobenzene	QN	5.8	72B	benzo(a)anthracene A NE
23B	238	3,3'dichlorobenzidine	QN	<b>6</b> B	73 <b>B</b>	benzo(a)pyrene NE
27B	358	2,4-dinitrotoluene	QN	7.8	74B	benzo(b)fluoranthene * NO
288	368	2,6-dinitrotoluene	QN	816	75B	benzo(k)fluoranthene * ME
862	378	1,2-diphenylhydrazine	QN	188	76B	Chrysene A ME
318	39B	fluoranthene	Q	28	77B	acenaphthylene [4]
178	40B 4-chlo	4-chlorophenyl phenyl ether	QN	38	788	anthracene B

Araiut: a. serv Results by Sample

LAB # 86-03-021 Continued From Above

NOT THE TOP THE	USA 1me Co	TEST CODE	M625 B N specified		rals
- 10 	2	88	798	benzo(ghi)perylene	MD
14 14 14 14 14 14 14 14 14 14 14 14 14 1	Q.	328	вов	fluorene	M
# th 4 n e	Ž	44B	818	phenanthrene B	2
enerted tene	2	198	828	dibenzo(a,h)anthracene	ŭ
rectadiene	Ω.	37B	838	indeno(1,2,3-cd)pyrene	Ÿ
130phorone	Q	45B	848	pyrene	2
naphthalene	Q				
nitrobenzene	2				

RE SULT

d5-nitrobenzene 91	2-fluorobiphenyl 83	d14-terphenyl 68	d10-biphenyl
ī.	r.	£	7 =

\*\* TELLINITIONS FOR THIS REPORT.

not detected at EPA detection limit method 625, (Federal Register, 10/26/84). tenzo(a)anthracene and chrysene co-elute in high concentrations. \_uq/l unless otherwise specified.  $\mathfrak{benzo}(\mathfrak{b})$  fluoranthene and  $\mathfrak{benzo}(k)$  fluoranthene co-elute. oran number or retention time on chromatogram. e-ults reported in\_\_\_

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PAGE 35 MECETVED: 03/04/86

Serv REPORT Results by Sample Analytical Serv

LAB # 86-03-021 Continued From Above

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SAMPLE ID Reagent Blank

FRACTION 05A TEST CODE M625 B NAME Nethod 625 Base/Neutrals Date & Time Collected not specified Category

Minimum detection

BL = detected in reagent blank; background subtraction not performed. **B** - anthracene and phenanthrene co-elute in high concentrations.

indicates dilution of sample if greater than one (1). J = estimated value, less than method detection limit. limits should be multiplied by conc. factor.

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LAB # 86-03-021

REPORT

Analytical Serv

FRACTION 05A TEST CODE MS 60B NAME Pesticides & PCBs by GC/MS Category Date & Time Collected not specified Results by Sample SAMPLE ID Reagent Blank RECEIVED: 03/04/86

VERIFIED BY LAK DS DETECTED 0 밀 Z Q ŭ 3 ŭ ŭ, ŭ Ĭ ű ij Ľ RESULT Ĭ COMPOUNDS DETECTED PCB-1232 PCB-1248 PCB-1260 toxaphene beta BHC PCB-1242 PCB-1016 alpha BHC gamma BHC PCB-1254 delta BHC PCB-1221 COMPOUND 3 EPA 102P 103P 104P 105P 106P 107P 108P 109P 110P 111P 112P 113P ANALYST NPDES SCAN 18P 19P 20P 21P 22P 23P 24P 25P 9 36 **4**P 35 DATE EXTRACTED 03/05/86 DATE INJECTED 03/19/86 밁 일 S 皇 2 2 2 2 9 2 2 9 RESULT 2 aldrin dieldrin 4, 4'-DDD beta endosulfan endrin heptachlor epoxide 4, 4'-DDE alpha endosulfan endosulfan sulfate endrin aldehyde heptachlor chlordane 4, 4'-DDT COMPOUND 2CB03021C05 EPA **89P** 90P 916 94P 96P 976 98P 999 92P 93P 95P 100P 101P DATA FILE CONC FACTOR NPDES SCAN 120 14P 10P 96 1 1 P 14P 15P 301 179 ٦ **6**P 7P 9 **073** 

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PAGE 37 RECEIVED: 03/04/86

Analytical Serv REPORT Results by Sample

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LAB # 86-03-021 Continued From Above

SAMPLE ID Reagent Blank

FRACTION O5A TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected not specified

AND DEFINITIONS FOR THIS REPORT NOTES

SCAN = scan number on chromatogram.

All results reported in micrograms/liter unless otherwise specified.

ND = not detected at EPA detection limit method 625, (Federal Register, 12/3/79).

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LAB # 85-03-021

REPORT

Analytical Serv

LAK 밀 Ξ ÿ Ü Ĭ Ĭ Ä ŭ 2 2 2 2 RESULT SBL 밀 Ĭ NAME CCMS Volatiles - SW846 COMPOUNDS DETECTED VERIFIED BY 1,2-dichloropropane cis-1,3-dichloropropylene 33V trans-1, 3-dichloropropylene ethylbenzene methylene chloride methyl chloride methyl bromide bromoform dichlorobromomethane trichlorofluoromethane chlorodibromomethane tetrachloroethylene toluene trichloroethylene vinyl chloride Category COMPOUND FRACTION OF TEST CODE SW8240 Date & Time Collected 02/28/86 33< EPA 320 440 450 460 470 490 510 867 870 380 **4BV** 850 88 **ANALYST** INSTRUMENT NPDES SCAN 66 Results by Sample 227 170 180 187 190 210 200 ) (1) 12 300 240 250 310 **≥** 297 DATE INJECTED 03/17/86 RESULT 2 욷 윋 S 밁 욷 S S S 2 밁 S 2 benzene carbon tetrachloride chlorobenzene 1, 1, 2, 2-tetrachloroethane chloroform 1, 2-trans-dichloroethylene 1, 2-dichloroethane 1, 1, 1-trichloroethane 1, 1-dichloroethane 1, 1, 2-trichloroethane 1,1-dichloroethylene chloroethane 2-chloroethylvinyl ether COMPOUND SAMPLE ID 860025 HZ0 VOA S011 DATA FILE 40003021V06 03/04/86 150 190 300 EPA **4** > **>**9 > 10% 110 130 140 167 234 29V CONC. FACTOR NPDES SCAN RECEIVED: 3 ? 230 100 110 160 8 150 270 140 287 260 3

RASASSASSATA LICAGAA SII TEGAGGAGGA ROOSAAAA TEGAGGAGA TEGAGGAGA TAGAGGAGA TAGAGGAGA TAGAGAAAAAAA T

PAGE 39 RECEIVED: 03/04/86

Analytical Serv Results by Sample

LAB # 86-03-021 Continued From Above

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SAMPLE 10 860025 H20 VDA S011

FRACTION OGA TEST CODE SW8240 Date & Time Collected 02/28/86

NAME GCMS Volatiles - SWB46 Category

SURROGATE RECOVERIES

 SCAN CODE
 COMPOUND
 RESULT

 199
 VS1
 d4-1,1-dichloroethane
 98

 381
 VS2
 d8-toluene
 102

 471
 VS3
 bromofluorobenzene
 92

NOTES AND DEFINITIONS FOR THIS REPORT.

All results reported in <u>uq/kq</u> unless otherwise specified. SCAN = scan number or retention time on chromatogram.

ND = not detected at detection limit of 10 ug/kg, unless otherwise specified

BL = detected in reagent blank; background subtraction not performed. J = estimated value; less than method detection limit.

CONC. FACTOR: indicates dilution of sample if greater than one (1). detection limits should be multiplied by conc. factor.

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	SW846	BY LAK	RESULT	ŭ.	O. C.	MD	NE	2 BL	ND	ND	ME	ND	ND	N.	ND	Ŭ.	ŭ.	THE COLUMN
LAB # 86-03-021	NAME GCMS Volatiles Category	VERIFIED BY COMPOUNDS DETECTED	COMPOUND	1,2-dichloropropane	cis-1,3-dichloropropylene	trans-1,3-dichloropropylene	ethylbenzene	methylene chloride	methyl chloride	methyl bromide	bromoform	dichlorobromomethane	trichlorofluoromethane	chlorodibromomethane	tetrachloroethylene	toluene	trichloroethylene	vingl chloride
	SW824(	YST ENT	EPA	320	) 33V	330 €1	380	440	450	46V	470	480	490	510	85V	860	870	887
REPORT Sample	-RACTION 07A TEST CODE SW8240 Date & Time Collected 02/28/86	ANALYST INSTRUMENT	NPDES SCAN	170	180	187	190	22V 103	210	200	50	120	300	8<	24V	25V	795	310
Serv Results by	-RACTION 07A Date & Time Col	03/11/86	RESULT N	QN	Q	QN	QN	QN	Q	QN	QN	QN	QN	Q	Q	QN		
Analytical S R	FRACT	DATE INJECTED	COMPOUND	benzene	on tetrachloride	chlorobenzene	1,2-dichloroethane	1, 1, 1-trichloroethane	1,1-dichloroethane	1, 1,2-trichloroethane	1, 1, 2, 2-tetrachloroethane	chloroethane	2-chloroethylvinyl ether	chloroform	1,1-dichloroethylene	1,2-trans-dichloroethylene		
98	VOA Soil	4CU03021V07	00		carbon		1,	1,1,1	1.	1, 1, 2	1, 1, 2, 2-t		2-chloro		1,1-	1,2-trans-		
03/04/	370038		EPA	\$	<b>&gt;</b> 9	2	100	110	130	140	150	160	190	230	290	300		
PAGE 40 RECEIVED: 03/04/86	SAMPLE ID 860026 VOA SOIL	DATA FILE CONC. FACTOR	NPDES SCAN	<b>&gt;</b> E	>9	7	150	270	140	280	230	<b>^6</b>	100	1110	167	260		

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Analytical Serv Results by Sample

LAB # 86-03-021 Continued From Above

SAMPLE ID 860026 VOA S011

FRACTION O7A TEST CODE SW8240 Date & Time Collected 02/28/86

NAME GCMS Volatiles - SW846 Category

SURROGATE RECOVERIES

COMPOUND RESULT	d4-1,1-dichloroethane 96	d8-toluene 101	bromofluorobenzene 113
SCAN CODE	201 VS1	382 VS2	471 VS3

NOTES AND DEFINITIONS FOR THIS REPORT.

All results reported in <u>ug/kg</u> unless otherwise specified SCAN = scan number or retention time on chromatogram.

ND = not detected at detection limit of 10 ug/kg, unless otherwise specified. BL = detected in reagent blank; background subtraction not performed

J = estimated value; less than method detection limit.

CONC. FACTOR: indicates dilution of sample if greater than one (1). etection limits should be multiplied by conc.

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LAB # 86-03-021

REPORT

Analytical Serv

VERIFIED BY LAM RESULT TEST CODE SW8240 NAME GCMS Volatiles - SW846 COMPOUNDS DETECTED cis-1, 3-dichloropropylene 33V trans-1, 3-dichloropropylene methyl bromide bromoform trichlorofluoromethane chlorodibromomethane tolvene vinyl chloride 1,2-dichloropropane ethylbenzene methylene chloride methyl chloride dichlorobromomethane tetrachloroethylene trichloroethylene Category COMPOUND Σ F4 Date & Time Collected not specified 33< 877 EPA 320 447 450 460 470 487 490 517 850 967 980 **ANALYST** INSTRUMENT 380 106 NPDES SCAN Results by Sample 227 217 310 18 200 300 8 247 297 17 180 190 120 250 200 DATE INJECTED 03/17/86 FRACTION 08A S N Q N 2 2 일 2 呈 2 Š 2 g RESULT Š benzene carbon tetrachloride chlorobenzene 1, 2-dichloroethane 1, 1, 1-trichloroethane 1,1-dichloroethane 1, 1, 2-trichloroethane 1, 1, 2, 2-tetrachloroethane chloroethane 2-chloroethylvinyl ether chloroform 1,1-dichloroethylene 1, 2-trans-dichloroethylene COMPOUND SAMPLE ID Reagent Blank VOA DATA FILE 4EB0317V000 RECEIVED: 03/04/86 300 EPA > 10 110 13 14 150 160 190 23V 290 3 \$ CONC. FACTOR NPDES SCAN 110 160 260 >9 150 277 287 230 100 3 ? 140 ? 079

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Results by Sample Analytical Serv

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LAB # 86-03-021 Continued From Above

SAMPLE ID Reagent Blank VOA

FRACTION OBA TEST CODE SW8240 NAME GCMS Volatiles - SW846 Date & Time Collected not specified Category

SURROGATE RECOVERIES

66 RESULT d4-1, 1-dichloroethane d8-toluene bromofluorobenzene COMPOUND **VS2 62** SCAN CODE **VS1** 202 382 471

AND DEFINITIONS FOR THIS REPORT. NOTES

SCAN = scan number or retention time on chromatogram.

ND = not detected at detection limit of 10 ug/kg, unless otherwise specified. All results reported in <u>ug/kg</u> unless otherwise specified.

BL = detected in reagent blank; background subtraction not performed.

indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit.

etection limits should be multiplied by conc.

PAGE 4 Analytical Serv REPORT LAB # 86-03-021
RECEIVED 03/04/8b NonReported Mork
FRACTION AND 1551 CODES FOR WORK NOT REPORTED ELSCHMERE
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CONTRACTOR CONTRACTOR

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LAB # 86-03-176

REPORT

specific matrix was not within acceptable limits indicating \* Indicates a value less than 5 times the detection limit CONTACT COMOVER @ Indicates that spike recovery for this analysis on the Second column confirmation performed for EPA 601 on -01 CERTIFIED BY Potential error for such low values ranges between Analytical Serv TEST CODES and NAMES used on this report PREPARED Radian Analytical Services BY 8501 MoPac Blvd. Footnotes and Comments Austin, Texas 78766 EP EXT RCRA Extraction Procedure
CP MET RCRA Metals
GC 501 EPA Method 601/GC PHONE (512) 454-4797 Box 9948 an interferent present Analytical Serv 05/20/86 10:26:08 50 and 100% ATTEN SAMPLES 3 HATILLIY CARYWELL AFB (Gen. Dunamics) Table ander separate cover WHEEL THEN IF ICANION 1 4 713 027-27-40 ALTEN Larry Crench Saldwes bow dl war REPUBLI Radian Austin ... Plant 4 THEM PLANTA MAT UNITED YEAR SAIL 082

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	LAB # 86-03-176			;
: :	Analytical Serv ′ REPORT RESULTS BY TEST	Sample 02 Sample 03 (entered units)	04/08/86 04/03/86	
	**** = 03/26/36	Sal CODE   Sales   Sal	th EXI	

NAME EPA Method 501/60	Category
4 LEST CODE GC 601	03/50/86 03/50/86
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VERIFIED BY MOLIDS DETECTED 4	REBULT
100 AMD 2	COMPOUND
THAMON STATE	114

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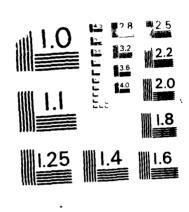
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INSTALLATION RESTORATION PROGRAM PHASE 2 CONFIRMATION/QUANTIFICATION STAG (U) RADIAN CORP AUSTIN TX DEC 87 F33615-83-D-4001 AD-8198 447 2/5 F/G 24/7 UNCLASSIFIED NL



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PAGE 4 RECEIVED: 03/26/86

Results by Sample Analytical Serv

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LAB # 86-03-176 Continued From Above

SAMPLE ID P-22 water

FRACTION 01A TEST CODE GC 601 NAME EPA Method 601/GC Date & Time Collected 03/20/86

NUTES AND DEFINITIONS FOR THIS REPORT

\*Dibromochloromethane, 1,1,2-trichloroethane and cis-1,3-dichloropropene co-elute All results reported in uq/l unless otherwise specified. ND = not detected at EPA detection limit method 601, (Federal Register, 12/3/79). #1, 1, 2, 2—tetrachloroethane and tetrachloroethylene co-elute. SCAN = scan number or retention time on chromatogram.

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LAB # 86-03-176	ACTION 01B TEST CODE GC 602 NAME EPA Method 602/GC ite & Time Collected 03/20/86	CL VERIFIED BY	COMPOUND	1,4-Bichlorobenzene	1,3-Dichlorobenzene	1,2∵Dichlorobanzene	
REPORT Sample	TEST CODE GC 602	ANAL YST INSTRUMENT	SCAN	}			
al Serv Results by Sample	FRACTION <u>O1B</u> Date & Time Col	INJECTED <u>03/27/86</u>	RESULT	QN	69.0	QN	QN
Analytica		D DATE INJE	COMPOUND	Benzene	Toluene	Ethyl Benzene	Chlurobenzene
PAGE 5 RECEIVED: 03/26/86	SAMPLE ID P-22 water	CONC. FACTOR 1	SCAN		7 08	6	

MUTES AND DEFINITIONS FOR THIS KEPORT.

SCAN = stan number or retention time on chromatogram.

All results reported in  $\frac{10474}{100}$  unless otherwise specified. ND = not detected at EPA detection limit method 602, (Federal Register, 12/3/79).

PAGE 6 RECEIVED: 03/26/86

Analytical Serv REPORT Results by Sample

LAB # 86-03-176

SAMPLE II) P-22 mud

FRACTION 02B TEST CODE EP MET NAME RCRA Metals Date & Time Collected 03/20/86

DATE ANALYZED 05/16/86

VERIFIED BY GCL

RESULT	0.06	<.0002	SO >	0 €
METAL	Arsenic	Mercury	Lead	Selenium
CODE	Ą	HG	PB	SE
RESULT	0.009*	0.099	*600.0	0.023*
METAL	Silver	Barium	Cadmium	Chromium
CODE	AG	вА	CD	CR

JOTES AND DEFINITIONS FOR THIS REPORT

unless otherwise specified. All elements determined by ICPES except Hg. \* = less that 5 times the detection limit. NA = not analyzed All results reported in ug/ml

PAGE 7 RECEIVED: 03/26/86

Analytical Serv REPORT Results by Sample

LAB # 86-03-176

SAMPLE 10 P-23 mud

FRACTION 03B TEST CODE EP MET NAME RCRA Metals Date % Time Collected 03/20/86

DATE ANALYZED 05/15/86

VERIFIED BY GCL

RESULT	0.06*	0.0040	08	€.08
METAL	Arsenic	Mercury	Lead	Selenium
CODE	AS	НС	PB	3E
RESULT	0.013	0.15	*500.0	0.019*
METAL	Silver	Barium	Cadmium	Chromium
CODE	AĢ	¥ 9	CD	CR

NOTES AND DEFINITIONS FOR THIS REPORT

unless otherwise specified. All elements determined by ICPES except Hg \* = less that 5 times the detection limit. NA = not analyzed All results reported in ug/ml

LAB # 86-03-184		CONTACT FRENCH	Footnotes and Comments  * Indicates a value less than 5 times the detection limit. Potential error for such low values ranges between 50 and 100%	@ Indicates that spike recovery for this analysis on the specific matrix was not within acceptable limits indicating an interferent present.	ical Serv TEST CODES and NAMES used on this report VOA Screen by IFB method GCMS Volatiles - SW846
11 Serv REPORT 04/14/86 05:08:30		PHONE (512) 454-4797	* Indicates a value less than 5 tim Potential error for such low values 50 and 100%.	@ Indicates that spike re specific matrix was not u an interferent present.	ical Serv TEST CODES and VOA Screen by IFB method GCMS Volatiles - SWB46
PAGE 1 RECEIVED: 03/27/86	Radian Corporation Larry French Austin, Texas	PLANT 4 SAMPLES 3 General Dynamics OEHL Plant 4, Bldg 4 Austin, Texas	Plant 4   Mud Samples   3/20/86   Fed Ex 736755582   Mud   212-027-27-40   Muder cenarate Cover		E IDENTIFICATION Analytyco Soil Swazeo
PAGE 1	REPORT TO TO ATTEN	CLIENT COMPANY FACILITY	EDRK ID TAKEL TAKEL TAKEL TAKEL TYPE TYPE TNOTICE	7 089	크인인

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LAB # 86-03-184		
tical Serv REPORT RESULTS BY TEST	Sample 02 (entered units)	03/27/86
Analyti	Sample 01 (entered units) (	03/27/86
PAGE 2 RECEIVED: 03/27/86	TEST CODE	IFB VS date complete

4	s - SW846	VERIFIED BY LAK DS DETECTED <u>8</u>	RESULT	opane ND	ylene ND	ylene ND	nzene6	chloride $69  \mathrm{RL}$	chloride ND	bromide ND	bromoform ND	thane <u>ND</u>	thane ND	thane ND	Jlene 9.6	toluene 470	Jene <u>1200</u>	chloride ND
LAB # 86-03-184	NAME GCMS Volatiles Category	LAK COMPOUNDS 1	COMPOUND	1,2-dichloropropane	cis-1,3-dichloropropylene	trans-1,3-dichloropropylen	ethylbenzen	methylene chlo	methyl chlo	methyl bro	brome	dichlorobromomethane	trichlorofluoromethan	chlorodibromomethane	tetrachloroethylen	to]	trichloroethylene	vinul chlo
	SW8240 /20/86	ANAL YST	EPA	320	330	33V tr	380	440	450	460	470	480	490	510	850	860	877	BBV
REPORT Sample	ION OIA TEST CODE SWB2 % Time Collected 03/20/86	ANALYST INSTRUMENT	NPDES SCAN	170	18V	187	190 456	22V 128	210	200	5	120	300	9	24V 380	25V 402	290 291	310
lts by	IN OIA	03/31/86	RESULT NE	QN	Q	Q	19	5.3	QN	QN	QN	N	QN	QN	ON	5.4		
Analytical Serv Resu	FRACTION OLA Date & Time	DATE INJECTED O	COMPOUND	benzene _	bon tetrachloride	chlorobenzene	1, 2-dichloroethane	1, 1, 1-trichloroethane	1,1-dichloroethane_	1, 1, 2-trichloroethane _	1,1,2,2-tetrachloroethane	chloroethane	2-chloroethylvinyl ether	chloroform _	1,1-dichloroethylene	1,2-trans-dichloroethylene		
98	SAMPLE ID P-22 VOA Soil	4CU03184V01	Ö		carbon		1,	1, 1,	1,	1, 1,	1, 1, 2, 2-		2-chlore		1,1-	1,2-trans		
3/27/8	-22 VC		EPA	<b>4</b>	<b>^9</b>	?	100	110	137	140	150	167	19∵	237	297	30.4		
3 /ED: 0		DATA FILE C. FACTOR	SCAN				(1) (3)	243								201		
PAGE 3 RECEIVED: 03/27/86	SAMPLE	DATA FILE CONC. FACTOR	NPDES	> e	79	2	150	270	140	^82   <b>91</b>	230	\$	100	110	160	367		

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RECEIVED: 03/27/86

REPORT Results by Sample Analytical Serv

Continued From Above LAB # 86-03-184

SAMPLE ID P-22 VOA SOIT

FRACTION OIA TEST CODE SW8240 NAME GCMS Volatiles - SW846 Date & Time Collected 03/20/86

Category

SURROGATE RECOVERIES

83 93 84 RESULT d8-toluene d4-1, 1-dichloroethane bromofluorobenzene COMPOUND **VS2 で82** vs1 SCAN CODE 220 339 501

AND DEFINITIONS FOR THIS REPORT. NOTES

All results reported in <u>uq/kg</u> unless otherwise specified SCAN = scan number or retention time on chromatogram.

340~= not detected at detection limit of  $10~{
m ug/kg}$ , unless otherwise specified. BL == detected in reagent blank; background subtraction not performed

indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. factor detection limits should be multiplied by conc.

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	SW846	BY LAK ED O	RESULT	N	N	N	QN	QN	N	QN	ND	Q	QN N	QN	QN	QN	2	Q
LAB # 86-03-184	NAME GCMS Volatiles Category	VERIFIED BY COMPOUNDS DETECTED	COMPOUND	1,2-dichloropropane	cis-1,3-dichloropropylene _	trans-1,3-dichloropropylene _	ethylbenzene _	methylene chloride	methyl chloride	methyl bromide .	bromoform.	dichlorobromomethane _	trichlorofluoromethane	chlorodibromomethane _	tetrachloroethylene _	toluene _	trichloroethylene _	vinyl chloride
	SW824(0/86	YST	EPA	320	330	33V tr	380	440	450	460	470	48V	490	510	850	758	870	880
REPORT Sample	ION 02A TEST CODE SW8240 & Time Collected 03/20/86	ANALYST INSTRUMENT	NPDES SCAN	170	18V	18V	190	227	210	200	57	120	30^	8 >	24∨	25V	297	310
Serv Results by	FRACTION <u>O2A</u> Date & Time Col	04/03/86	RESULT N	QN	QN	QN	QN	QN	QN	QN	QN	QN	CN	QΝ	QN	QN		
Analytical S R	FRACT	DATE INJECTED	самеаимр	benzene	carbon tetrachloride	chlorobenzene	1,2-dichloroethane	1, 1, 1-trichloroethane	1,1-dichloroethane	1,1,2-trichloroethane	1, 1, 2, 2-tetrachloroethane	chloroethane	2-chloroethylvinyl ether	chloroform	1,1-dichloroethylene	1,2-trans-dichloroethylene		
98	DA Soil	4CR03184V02			ēJ			1,1		1,1	1, 1, 2, 2		2-chlo		1,	1,2-tran		
3/27/	-23 VI		EPA	74	79	76	100	110	130	140	150	160	197	234	.6ĕ	30.1		
PAGE 5 RECEIVED: 03/27/86	SAMPLE ID P-23 VOA SOII	DATA FILE CONC. FACTOR	NPDES SCAN	λE	79	7.6	150	270	₹ 7 0	<sup>УВС</sup> 93	230	<b>^6</b>	100	110	160	260		

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PAGE 6 RECEIVED: 03/27/86

Analytical Serv REPORT Results by Sample

LAB # 86-03-184 Continued From Above

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SAMPLE ID P-23 VOA SOI

FRACTION 02A TEST CODE SW8240 Date & Time Collected 03/20/86

NAME GCMS Volatiles - SW846 Category

SURROGATE RECOVERIES

SCAN CODE COMPOUND RESULT

220 VS1 d4-1,1-dichloroethane 84

399 VS2 d8-toluene 93

501 VS3 bromofluorobenzene 82

NOTES AND DEFINITIONS FOR THIS REPORT.

All results reported in <u>uq/kq</u> unless otherwise specified SCAN = scan number or retention time on chromatogram

 ${\sf ND} = {\sf not}$  detected at detection limit of 10 ug/kg, unless otherwise specified

 $\mathrm{SL} = \mathrm{detected}$  in reagent blank; background subtraction not performed J = estimated value, less than method detection limit.

than one (1). indicates dilution of sample if greater detection limits should be multiplied by conc. factor.

SOOR REVIEW WULLE RESSESSE VIOLENCE VIOLENCE VIOLENCE STORM SERVICE SE CORPORATION

	SW846	BY LAK ED Z	RESULT	QN	ND	QN	QN	3 0	ΔN	QN	N	ND	QN	N	ON	ND	QN	QN
LAB # 86-03-184	NAME GCMS Volatiles -	NERIFIED BY COMPOUNDS DETECTED	COMPOUND	1,2-dichloropropane	cis-1, 3-dichloropropylene	trans-1,3-dichloropropylene	ethylbenzene	methylene chloride	methyl chloride	methyl bromide	bromofarm	dichlorobromomethane	trichlorofluoromethane	chlorodibromomethane	tetrachloroethylene	toluene	trichloroethylene	vinyl chloride
	SW8240 specifi	ANALYST	EPA	320	330	33V tı	380	440	450	460	470	480	490	510	850	867	870	887
REPORT ID 1 e	TEST CODE ected not	ANALYST INSTRUMENT	SCAN		_	_	_	129	_	_	_	_	_	_	_	_	_	_
Sal	TES Ilect	oi.	NPDES	170	180	187	190	220	210	200	36	120	30A	9	24∨	250	290	310
Serv Results by	FRACTION <u>O3A</u> TEST C Date & Time Collected	03/31/86	RESULT	Б С	QN	QN	QΝ	QN	QN	QN	ON	QN	QN	CIN	CN	GN		
	FRACTI Date &	DATE INJECTED		ben zene	hloride	chlorobenzene	oethane	oethane	oethane	oethane	oethane	oethane	l ether	oroform	thylene	thylene		
Analytical	Reagent Blank VOA Soil		COMPOUND		carbon tetrachl	chloro	1,2-dichloroe	1,1,1-trichloroe	1,1-dichloroe	1,1,2-trichloroe	1, 1, 2, 2-tetrachloroethane	chloroe	∠-chloroethylvinyl	chlor	1,1-dichloroeth	1,2-trans-dichloroeth		
98	t Blan	4EB0331V000									1, 1,		. ⊢ C			1, 2-t		
03/27/	Reagen		EPA	, <del>1</del>	79	7	100	110	137	140	150	16V	197	237	7.62	ACE		
PAGE 7 RECEIVED: 03/27/86	SAMPLE ID	DATA FILE CONC. FACTOR	NPDES SCAN	3V 301	79	7.	150	277	140	287	1 23V	> 6	100	110	167	36V		
		~	_						7	08	15							

PAGE 8 RECEIVED: 03/27/86

Analytical Serv Results by Sample

LAB # 86-03-184 Continued From Above

SAMPLE ID Reagent Blank VOA Soil

FRACTION 03A TEST CODE SW8240 NAME GCMS Volatiles - SW846 Date & Time Collected not specified Category

SURROGATE RECOVERIES

100 RESULT d4-1,1-dichloroethane\_ d8-toluene bromofluorobenzene COMPOUND **689** VS1 SCAN CODE 400 221 501

AND DEFINITIONS FOR THIS REPORT NOTES

All results reported in <u>ug/kg</u> unless otherwise specified. SCAN = scan number or retention time on chromatogram.

440~% not detected at detection limit of 10~ ug/kg, unless otherwise specified.

 $\mathsf{BL}_{-} = \mathsf{detected}$  in reagent blank; background subtraction not performed J = estimated value; less than method detection limit.

indicates dilution of sample if greater than one (1).

detection limits should be multiplied by conc. factor

- Austin

RAS

Page 1

Work Order # 86-05-072

Potential error for such low values ranges between 50 and 100%. <u>Unknown compound eluting near trichloroethene on 8010 split 05</u> specific matrix was not within acceptable limits indicating CONTACT CONDVER \* Indicates a value less than 5 times the detection limit @ Indicates that spike recovery for this analysis on the Compounds found in reagent blanks not subtracted out TEST CODES and NAMES used on this report Many unknown compounds present on 8020 split 05. Services PREPARED Radian Analytical SW846 aromatic volatiles Oil and grease, infrared Austin, TX 78751 SWB46 halogenated vols 8501 Mo-pac Bl Footnotes and Comments an interferent present. stin 06/23/86 11:41:11 512-454-4797 PO Box 9948 Special preparation Hydrocarbons ATTEN PHONE PREP W SW8010 SW8020 ONG IR SAMPLES under separate cover FACILITY General Dynamics 212-027-27-40 Plant 4, USAF ATTEN Larry French Received: 05/13/86 Austin REPORT Radian CLIENT PLANTA soils B1 4 PAW PAW SAMPLE 850029 850030 850032 850033 850034 850031 WORK ID TRANS TAKEN TYPE COMPANY INVOICE 0 097

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Page 2 Received: 05/13/86	RAS	- Austin Results By Test	REPORT Test	Work Order # 86-05-072	# 86-05-072
TEST CODE	Sample 01   (entered units)	Sample 02 (entered units)	Sample 03 (entered units)	Sample 04 (entered units)	Sample 05 (entered units)
HC_IR =97L	5/60	4000	3800	230	14000
UNG IR	4/00 19/9	5,600 6,60 9,03,70	6/6n 0095	830 6/6n	13000
date complete	00 /01 /00	00/10/00	08/10/80	06/10/86	06/10/86
TEST CODE	Sample 06				
HC IR mg7L	6/6n				
PREP W date complete	06/10/86				
-					

RAS - Austin

Work Order # 86-05-072

Page 3 Received: 05/13/86 SAMPLE ID 860029

stin Results by Sample

FRACTION 01A TEST CODE SW8010 NAME SW846 halogenated vols. Date & Time Collected 05/12/86

VERIFIED MCL B UNITS U9/kg	DET LIMIT	1.0	15	2.3	6.5	3.1	A/N	1.6	0.88	1.3	0. 63	0.38	16	1.5	1.3
FILE #	RESULT	N	ND	QN	QN.	Q	QN	Q.	QN	QN.	QN.	Q.	20.0	ON	QN
INJECTD <u>05/14/86</u>	COMPOUND	Chloromethane	Bromomethane	Vinyl chloride	Chloroethane	Methylene chloride	Trichlorofluoromethane	1,1-Dichloroethene	1,1-Dichloroethane	trans-1,2-Dichloroethene	Chloroform	1,2-Dichloroethane	1, 1, 1-Trichloroethane	Carbon tetrachloride	Bromodichloromethane
ANALYST CL INSTRMT B	CAS#	74-87-3	74-83-9	75-01-4	75-00-3	75-09-2	75-69-4	75-35-4	75-34-3	156-60-5	6766-3	107-06-2	71-55-6	56-23-5	75-27-4

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Rage 4	ved:	rage 4 Received: 05/13/86	RAS - AUSTIN Resu	tin Results by Sam	Sample	Work Urger # 86-03-0/2 Continued From Above
SAMPL	E 10	SAMPLE ID 860029	FRACTION 01A Date & Time	Coll	ACTION OIA TEST CODE SW8010 te & Time Collected 05/12/86	NAME SW846 halogenated vols. Category
		CAS#	COMPOUND	RESULT	DET LIMIT	
	7	78-87-5	1,2-Dichloropropane	N	0.50	
	1006	10061-02-6	trans-1,3-Dichloropropene	QN	4 B	
	7	79-01-6	Trichloroethene	QN	7.4	
	12	124-48-1	Dibromochloromethane	N	1.1	
	7	79-00-5	1, 1, 2-Trichloroethane	QN	0.25	
	1006	10061-01-5	cis-1,3-Dichloropropene	QN	2.5	
7	11	110-75-8	2-Chloroethylvinyl ether	QN	1.6	
' 1	7	75-25-2	Втомоғатм	QN	5.5	
00	7	79-34-5	1, 1, 2, 2-Tetrachloroethane	QN	0.38	
	(d	127-18-4	Tetrachloroethene	QN	4.3	
	10	108-90-7	Chlorobenzene	QN		
	54	541-73-1	1,3-Dichlorobenzene	QN	4.0	
	0	95-50-1	1,2-Dichlorobenzene	QN	1.9	
	10	106-46-7	1,4-Dichlorobenzene	QN	3.0	
			SURROGATES			
	7	74-97-5	Bromochloromethane	9 % 66	Recovery	
	301	3017-95-6	2-Bromo-1-chloropropane	2 2	Recovery	
	11	110-55-5	1-4-Dichlorobutane	×	% Recovery	

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Page 5 Received: 05/13/86

- Austin REPORT Results by Sample RAS

Work Order # 86-05-072 Continued From Above

COCCEPTED MICHIGANIC STREETS

SAMPLE 1D 860029

FRACTION 01A TEST CODE SW8010 NAME SW846 halogenated vols.
Date & Time Collected 05/12/86 Category

460-00-4

% Recovery 1-Bromo-4-fluorobenzene

NOTES AND DEFINITIONS FOR THIS REPORT

ND = not detected at detection limit DET LIMIT = DETECTION LIMIT

NA = not analyzed

\* = less than 5 times the detection limit

N\A= not available

Page 6 Received:
SAMPLE 1D 860029

ANALYST INSTRMT

REPOS	Samo le
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	5
- Austin	Resul
t	
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Work Order # 86-05-072

NAME SW846 aromatic volatiles Category UNITS RESULT DET LIMIT 500 500 100 200 100 40 VERIFIED FRACTION 01B TEST CODE SW8020 Date % Time Collected 05/12/86 2 욷 N Q 2 2 윋 S COMPOUND Benzene Toluene Ethylbenzene Chlorobenzene p-Xylene m-Xylene o-Xylene 1, 4-Dichlorobenzene 1, 3-Dichlorobenzene 1, 2-Dichlorobenzene FILE # INJECTED 05/24/86 CAS# 106-42-3 108-38-3 71-43-2 108-90-7 95-47-6 108-88-3 100-41-4 105-46-7 541-73-1 95-50-1 CL 100000

102

7

SURROGATES

102% recovery a, a, a-Trifluorotoluene 8-80-86

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

Page 7 Received: 05/13/86

- Austin RAS

REPORT Results by Sample

Work Order # 86-05-072

Continued From Above

**SAMPLE ID 860029** 

FRACTION O1B TEST CODE SW8020 Date & Time Collected 05/12/86

NAME SW846 aromatic volatiles Category

ND = not detected at detection limit

\* = less than 5 times the detection limit N\A = not available NA = not analyzed

Received: 05/13/86 Page 8

- Austin RAS

tin Results by Sample

THE PROPERTY OF THE PROPERTY O

Work Order # 86-05-072

NAME SW846 halogenated vols.

Category

SAMPLE 1D 860030

FRACTION 02A TEST CODE SW8010

Date & Time Collected 05/12/86

Uq/kq VERIFIED UNITS DET LIMIT 0.63 0 38 A/Z 0.88 딯 밁 밁 2 g 밁 2 S S S S 2 21.1 FILE # RESULT g INJECTD 05/14/86 Chloromethane Bromomethane Vinyl chloride Chloroethane Methylene chloride **Trichlorofluoromethane** 1,1-Dichloroethene 1,1-Dichloroethane trans-1, 2-Dichloroethene Chloroform 1,2-Dichloroethane 1, 1, 1-Trichloroethane Carbon tetrachloride Bromodichloromethane COMPOUND R 155-60-5 67--66--3 107-05-2 71-55-6 56-23-5 75-27-4 74-87-3 74-83-9 75-01-4 75-00-3 75-09-2 75-69-4 75-35-4 75-34-3 CAS# ANALYST INSTRMT

	Work Order # 86-05-072 Continued From Above	SW8010 NAME SW846 halogenated vols. 2/86 Category																				
	tın Results by Sample	FRACTION OZA TEST CODE SW8010 Date % Time Collected 05/12/86	RESULT DET LIMIT	ND 0.50	ND 4 3	ND 7. 4	ND 1 1	ND 0.25	ND 2.5	ND 1. 6	ND 2.5	0 38	ND 4 3	ND 3.1	ND 4 O	ND 1 9	3. O		110 % Recovery	% Recovery	% Recovery	
	RAS - Austin Result	FRACTION 02A Date & Time	COMPOUND	1,2-Dichloropropane	trans-1,3-Dichloropropene	Trichloroethene	Dibromochloromethane	1, 1, 2-Trichloroethane	cis-1,3-Dichloropropene	2-Chloroethylvinyl ether	Втомоfотм	1, 1, 2, 2-Tetrachloroethane	Tetrachloroethene	Chlorobenzene	1, 3-Dichlorobenzene	1, 2-Dichlorobenzene	1, 4-Dichlorobenzene	SURROGATES	Bromochloromethane	2-Bromo-1-chloropropane	1-4-Dichlorobutane	
- A O U	.Page 9 Received: 05/13/86	SAMPLE 1D 860030	CAS#	78-87-5	10061-02-6	79-01-6	124-48-1	79005	10061-01-5	110-75-8	75-25-2	79-34-5	127-18-4	108-90-7	541-73-1	95-50-1	105-45-7		74-97-5	3017-95-6	110-55-5	

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RAS - Austin

REPORT Results by Sample

Work Order # 86-05-072 Continued From Above

TOTAL TOTAL OF THE TOTAL SECURITY

CONTRACTOR CONTRACTOR

SAMPLE 1D 860030

FRACTION 02A TEST CODE SW8010 Date % Time Collected 05/12/86

NAME SW846 halogenated vols. Category

460-00-4

% Recovery 1-Bromo-4-fluorobenzene

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

\* = less than 5 times the detection limit

N\A= not available

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Page 11 Received: 05/13/86

- Austin RAS

REPORT Results by Sample

Work Order # 86-05-072

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SAMPLE 1D 860030

FRACTION 02B TEST CODE SW8020 NAME SW846 aromatic volatiles Date & Time Collected 05/12/86 Category

Category

깅 ANALYST INSTRMT

UNITS

VERIFIED

INJECTED 05/24/86

RESULT DET LIMIT COMPOUND

CAS#

71-43-2

108-88-3

500 2 Benzene

500 S Toluene

9 2 뮏 Chlorobenzene Ethylbenzene

100 200 S 밁 p-Xylene m-Xylene

106-42-3

107

108-38-3

108-90-7

100-41-4

200 40 N Ŝ o-Xylene 1,4-Dichlorobenzene 95-47-6 106-46-7

20 20 2 밁 1, 3-Dichlorobenzene 1,2-Dichlorobenzene 541-73-1 95-50-1

SURROGATES

92% recovery a, a, a-Trifluorotoluene 8-80-86

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DEFECTION LIMIT

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SAMPLE 1D 860030

RAS - Austin

stin Results by Sample

Work Order # 86-05-072 Continued From Above

FRACTION O2B TEST CODE SW8020 Date & Time Collected 05/12/86

NAME SW846 aromatic volatiles Category

\* = less than 5 times the detection limit ND = not detected at detection limit NA = not analyzed N\A = not available

CONTRACTOR OF THE STATE OF THE

Received: 05/13/86 Page 13

stin Results by Sample - Austin RAS

Work Order # 86-05-072

Second microscopia and a second microscopia an

SAMPLE ID 860031

FRACTION 03A TEST CODE SW8010 NAME SW846 halogenated vols. Date & Time Collected 05/12/86

VERIFIED FILE # INJECTD 05/14/86 RP ANAL.YST INSTRMT

UQ/kg B UNITS

DET LIMIT RESULT COMPOUND CAS#

밁 Chloromethane

74-87-3

74-83-9

75-01-4

밁 Bromomethane

S

Vinyl chloride

6.5

ᄝ

Chloroethane

75-00-3

S

Methylene chloride

A/A

밁

S

1, 1-Dichloroethene

Trichlorofluoromethane

75-69-4

75-35-4

109

75-09-2

7

1, 1-Dichloroethane

75-34-3

156-60-5

67-66-3

2-90-201

0.88

ᄝ

밁

trans-1, 2-Dichloroethene

0.63

S

Chloroform

0.38

Z

1, 2-Dichloroethane

22. 1

1, 1, 1-Trichloroethane

Carbon tetrachloride

56-23-5

75-57-4

71-55-6

Bromodichloromethane

밁

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	Work Order # 86-05-072 Continued From Above	NAME SW846 halogenated vols. Category																			
X 0 - L	RAS - Austin Results by Sample	FRACTION 03A TEST CODE SW8010 Date & Time Collected 05/12/86	COMPOUND RESULT DET LIMIT	1,2-Dichloropropane ND 0.50	trans-1, 3-Dichloropropene ND 4.3	Trichloroethene ND 7.4	Dibromochloromethane ND 1.1	1,1,2-Trichloroethane ND 0.25	cis-1,3-Dichloropropene ND 2.5	2-Chloroethylvinyl ether ND 1.6	Bromoform ND 2.5	1,1,2,2-Tetrachloroethane ND 0.38	Tetrachloroethene ND 4.3	Chlorobenzene ND 3.1	1, 3-Dichlorobenzene ND 4.0	1,2-Dichlorobenzene ND 1.9	1,4-Dichlorobenzene ND 3.0	SURROGATES	Bromochloromethane 104 % Recovery	2-Bromo-1-chloropropane "Recovery	1-4-Dichlorobutane % Recovery
CORPORATION	Page 14 Received: 05/13/86	SAMPLE ID 860031	CAS#	78-87-5	10061-02-6 tran	79-01-6	124-48-1	79-00-5	10061-01-5 ci	110-75-8 2-C	75-25-2	79-34-5	157-18-4	108-90-7	541-73-1	95-50-1	105-45-7		74-97-5	3017-95-6	110~56~5

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itin Results by Sample - Austin RAS

Work Order # 86-05-072 Continued From Above

SAMPLE ID 860031

FRACTION 03A TEST CODE SW8010 NAME SW846 halogenated vols. Date & Time Collected 05/12/86

460-00-4

% Recovery 1-Bromo-4-fluorobenzene

NOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at detection limit DET LIMIT = DETECTION LIMIT

\* = less than 5 times the detection limit NA = not analyzed

N\A≈ not available

REPORT Results by Sample - Austin RAS

Work Order # 86-05-072

SAMPLE 1D 860031

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FRACTION 03B TEST CODE SW8020 NAME SW846 aromatic volatiles Date & Time Collected 05/12/86

Category

ACL VERIFIED

> 김 ANALYST INSTRMT

FILE # INJECTED 05/24/86

UNITS

CAS#

COMPOUND RESULT DET LIMIT

500

500

71-43-2

108-88-3

윋 밁 Benzene Toluene

Ethylbenzene

S

Chlorobenzene

p-Xylene

106-42-3

108-90-7

100-41-4

108-38-3

112

7

95-47-6

106-46-7

541-73-1

95-50-1

m-Xylene

100 Ž

2

200

200

S

o-Xylene

40

1, 4-Dichlorobenzene

1, 3-Dichlorobenzene

1, 2-Dichlorobenzene

S

50 S Q

SURROGATES

a, a, a-Trifluorotoluene 8-80-86

102% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

Page 17 Received: 05/13/86

SAMPLE ID 860031

\* = less than 5 times the detection limit

N\A = not available

NA = not analyzed

ND = not detected at detection limit

Results by Sample

- Austin

RAS

REPORT

Work Order # 86-05-072 Continued From Above

NAME SW846 aromatic volatiles

Category

FRACTION 03B TEST CODE SW8020 Date & Time Collected 05/12/86

113

- Austin Results by Sample RAS

Work Order # 86-05-072

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Page 18 Received: 05/13/86

SAMPLE 1D 860032

FRACTION 04A TEST CODE SW8010 NAME SW846 halogenated vols.

Date % Time Collected 05/12/86 Category

VERIFIED MCL B UNITS U9/kg	DET LIMIT	1.0	15	ci ci	6. 5	3. 1	A\N	1.6	0.88	1.3	0. 63	0.38	16	1.5	1.3
FILE #	RESULT	ND	ND	ND	ND	QN	QN	Q.	Q	S	QN	QN	N	QN	QN
INJECTD 05/14/86	COMPOUND	Chloromethane	Bromomethane	Vinyl chloride	Chloroethane	Methylene chloride	Trichlorofluoromethane	1, 1-Dichloroethene	1,1-Dichloroethane	trans-1,2-Dichloroethene	Chloroform	1,2-Dichloroethane	1, 1, 1-Trichloroethane	Carbon tetrachloride	Bromodichloromethane
'ST <u>RP</u> IMT B	CAS#	74-87-3	74-83-9	75-01-4	75-00-3	75-09-2	75-69-4	75-35-4	75-34-3	156-60-5	67-56-3	107-06-2	71-55-6	56-23-5	75-27-4
anal yst I nstrmt						7	11	4							

	Work Order # 86-05-072 Continued From Above	NAME SW846 halogenated vols. Category																			
	tin Results by Sample	FRACTION 04A TEST CODE SW8010 Date & Time Collected 05/12/86	RESULT DET LIMIT	ND 0.50	ND 4.3	ND 7. 4	ND 1.1	ND 0. 25	ND 2. 5	ND 1. 6	ND 2.5	ND 0.38	ND 4.3	ND 3. 1	ND 4.0	ND 1.9	ND 3. 0		92 % Recovery	% Recovery	% Recovery
CORPORATION	RAS - Austin Resul	FRACTION 04A Date & Time	COMPOUND	1,2-Dichloropropane	trans-1, 3-Dichloropropene	Trichloroethene	Dibromochloromethane	1,1,2-Trichloroethane	cis-1, 3-Dichloropropene	?-Chloroethylvinyl ether	Втомоfотм	1, 1, 2, 2-Tetrachloroethane	Tetrachloroethene	Chlorobenzene	1,3-Dichlorobenzene	1, 2-Dichlorobenzene	1, 4-Dichlorobenzene	SURROGATES	Bromochloromethane _	2-Bromo-1-chloropropane	1-4-Dichlorobutane
	Page 19 Received: 05/13/86	SAMPLE ID 860032	CAS#	78-87-5	10061-02-6	79-01-6	124-48-1	2-00-62	10061-01-5	110-75-8	7-52-52	11	127-18-4	108-90-7	541-73-1	95-50-1	106-46-7		74-97-5	3017-95-6	110-56-5

Page 20 Received: 05/13/86

SAMPLE ID 860032

RAS - Austin

stin Results by Sample

FRACTION 04A TEST CODE SW8010 Date & Time Collected 05/12/86

NAME SW846 halogenated vols. Category Work Order # 86-05-072 Continued From Above

% Recovery 1-Bromo-4-fluorobenzene

NOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at detection limit DET LIMIT = DETECTION LIMIT

than 5 times the detection limit NA = not analyzed

N\A= not available

Page 21 Received: 05/13/86 SAMPLE 1D 860032

itin Results by Sample Austin RAS

Work Order # 86-05-072

FRACTION 04B TEST CODE SW8020 NAME SW846 aromatic volatiles Date & Time Collected 05/12/86

Category

VERIFIED

리 ANAL YST INSTRMT

FILE #

INJECTED 05/24/86

UNITS

RESULT DET LIMIT 200

COMPOUND

CAS#

71-43-2

108-88-3

100-41-4

108-90-7

Benzene

Toluene

Ethylbenzene

S 2

2

9

500

2

Chlorobenzene

p-Xylene

106-42-3

108-38-3

95-47-6

106-46-7

541-73-1

95-50-1

30

100

밁

밁

m-Xylene

200 S

o-Xylene

100

밁

1, 4-Dichlorobenzene

1, 3-Dichlorobenzene

1, 2-Dichlorobenzene

4

50

밁

50

2

SURROGATES

100% recovery

a, a, a-Trifluorotoluene

8-80-86

HUTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

SESSENTATION SESSENT COCCOSS CONTRACTOR CONT

Page 22 Received: 05/13/86

RAS

stin Results by Sample - Austin

Work Order # 86-05-072

Continued From Above

SAMPLE 1D 860032

FRACTION 04B TEST CODE SW8020 Date % Time Collected 05/12/86

NAME SW846 aromatic volatiles Category

\* = less than 5 times the detection limit ND = not detected at detection limit NA = not analyzed N\A = not available

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Work Order # 86-05-072

SAMPLE 1D 860033

RAS - Austin Results by Sample

FRACTION 05A TEST CODE SW8010 NAME SW846 halogenated vols. Date & Time Collected 05/12/86 Category

VERIFIED MCL B UNITS U9/kg	DET LIMIT	1.0	15	<u>ෆ</u>	6.5	3.1	W/N	1.6	0.88	1.3	0.63	0.38	16	1.5	1.3
FILE #	RESULT	QN	QN	QZ	ND	QN	N	QN	N	N	N	CIN	Z	QN	CN
INJECTD 05/14/86	COMPOUND	Chloromethane	Bromomethane	Vinyl chloride	Chloroethane	Methylene chloride	Trichlorofluoromethane	1,1-Dichloroethene	1,1-Dichloroethane	trans-1,2-Dichloroethene	Chloroform	1,2-Dichloroethane	1, 1, 1-Trıchloroethane	Carbon tetrachloride	Bromodichloromethane
ANALYST INSTRMT B	CAS#	74-87-3	74-83-9	75-01-4	75-00-3	Z-60-52 <b>7</b>	/ <del></del>	0 75-35-4	75-34-3	156605	67-66-3	107-06-2	71-55-6	56-235	75-27-4

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Work Order # 86-05-072 Continued From Above	NAME SW846 halogenated vols. Category																				
tin Results by Sample	FRACTION 05A TEST CODE SW8010 Date & Time Collected 05/12/86	RESULT DET LIMIT	ND 0 50	ND 4.3	ND 7. 4	ND 1.1	ND 0.25	ND 2.5	ND 1. 6	ND 2.5	ND 0 38	ND 4. 3	ND 3.1	ND 4. 0	ND 1.9	ND 3.0		92 % Recovery	% Recovery	% Recovery	
RAS - Austin Resu	FRACTION Date & T	COMPOUND	1,2-Dichloropropane	trans-1,3-Dichloropropene	Trichloroethene	Dibromochloromethane	1, 1, 2-Trichloroethane	cis-1,3-Dichloropropene	2-Chloroethylvinyl ether	Втомоfотм	1, 1, 2, 2—Tetrachloroethane	Tetrachloroethene	Chlorobenzene	1,3-Dichlorobenzene	1, 2-Dichlorobenzene	1,4-Dichlorobenzene	SURROGATES	Bromochloromethane	2-Bromo-1-chloropropane	1-4-Dichlorobutane	
Page 24 Received: 05/13/86	SAMPLE 1D 860033	CAS#	78-87-5	10061-02-6	79-01-6	124-48-1	79-00-5	10061-01-5	110-75-8	2-52-52	79-34-5	0 127-18-4	108-90-7	541-73-1	95-50-1	106-46-7		74-97-5	3017-956	110-55-5	

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RAS - Austin Results by

stin Results by Sample

Work Order # 86-05-072 Continued From Above

SAMPLE 1D 860033

FRACTION 05A TEST CODE SW8010 Date & Time Collected 05/12/86

NAME SWB46 halogenated vols Category

460-00-4

1-Bromo-4-fluorobenzene % Recovery

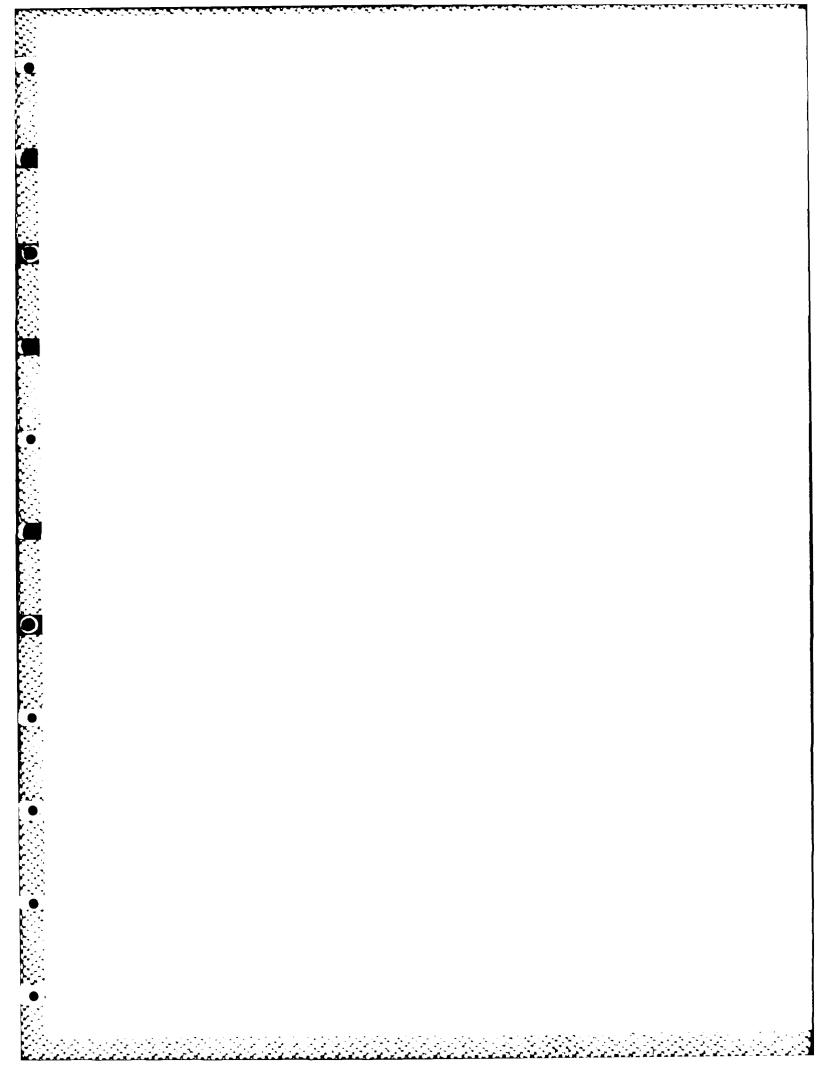
NOTES AND DEFINITIONS FOR THIS REPORT

DET LIMIT = DETECTION LIMIT ND = not detected at detection limit

NA = not analyzed

\* = less than 5 times the detection limit

\A≕ not available



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stin Results by Sample - Austin RAS

Work Order # 86-05-072

SAMPLE ID 860033

FRACTION 05B TEST CODE SW8020 Date & Time Collected 05/12/86

NAME SW846 aromatic volatiles Category

VERIFIED

MCL

MCL ANALYST INSTRMT

FILE # INJECTED 05/24/86

UNITS

CAS#

71-43-2

108-88-3

COMPOUND RESULT DET LIMIT

50000 2 Benzene

50000 2

Toluene

9009

윋

Ethylbenzene

밁

Chlorobenzene

108-90-7

7

122

106-42-3

108-38-3

95-47-6

106-46-7

541-73-1

95-50-1

100-41-4

3000

10000 뮏

p-Xylene

뮏

m-Xylene

o-Xylene

20000

10000 윋

4000

1,4-Dichlorobenzene

1, 3-Dichlorobenzene

뒫

5000 밁

5000 밁

1,2-Dichlorobenzene

SURROGATES

87% recovery a.a.a-Trifluorotoluene

8-80-86

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

Page 27 Received: 05/13/86

SAMPLE 1D 860033

RAS - Austin

itin Results by Sample

Work Order # 86-05-072 Continued From Above

NAME SW846 aromatic volatiles

Category

FRACTION 05B TEST CODE SW8020 Date & Time Collected 05/12/86

\* = less than 5 times the detection limit ND = not detected at detection limit NA = not analyzed

N\A = not available

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RAS - Austin Results by Sample

Work Order # 86-05-072

SAMPLE 1D 860034

FRACTION O6A TEST CODE SW8010 NAME SW846 halogenated vols. Date & Time Collected 05/12/86

VERIFIED MCL FILE # B UNITS UQ/KQ	RESULT DET LIMIT	1. O	15 UN	ND 2.3	ND 6. 5	ND 3.1	ND	ND 1.6	0. 88	ND 1.3	ND 0.63	ND 0 38	ND 22	ND 1.5	ND 1.3
INJECTD 05/14/86	COMPOUND	Chloromethane	Bromomethane	Vinyl culoride	Chloroethane	Methylene chloride	Trichlorofluoromethane	1,1-Dichloroethene	1,1-Dichloroethane	trans-1,2-Dichloroethene	Chloroform	1,2-Dichloroethane	1,1,1-Trichloroethane	Carbon tetrachloride	Bromodichloromethane
ANALYST RP	CAS#	74-87-3	74-83-9	75-01-4	75-00-3	Z-60-51	4-69-94 <b>24</b>	75-35-4	75-34-3	15560-5	67-65-3	107-06-2	71-55-6	56-23-5	75-27-4

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Page 29 Received: 05/13/86 SAMPLE ID 860034	RAS - Austin Resul FRACTION Date & Ti	Results by Sample TION OGA TEST	Austin Results by Sample FRACTION OGA TEST CODE SW8010 Date & Time Collected 05/12/86	Work Order # 86-05-072 Continued From Above NAME SW846 halogenated vols. Category
CAS#	COMPOUND	RESULT	DET LIMIT	
78-87-5	1,2-Dichloropropane	Q	0.50	
10061-02-6	trans-1,3-Dichloropropene	QN	6. 4 B	
79-01-6	Trichloroethene	QN	13	
124-48-1	Dibromochloromethane	N	1.1	
79-00-5	1, 1, 2-Trichloroethane	Q	0.25	
10061-01-5	cis-1,3-Dichloropropene	Q N	2.5	
110-75-8	2-Chloroethylvinyl ether	Q N	1.6	
75-25-2	Bromoform	QN	2.5	
79-34-5	1, 1, 2, 2-Tetrachloroethane	QN	0 38	
127-18-4	Tetrachloroethene	QN	0 4	
108-90-7	Chlorobenzene	QN	3.1	
541-73-1	1, 3-Dichlorobenzene	QN	0 4	
95-50-1	1,2-Dichlorobenzene	QN	1.9	
105-46-7	1, 4-Dichlorobenzene	QN	3.0	
	SURROGATES			
74-97-5	Bromochloromethane	114 % R	Recovery	
3017-95-6	2-Bromo-1-chloropropane	, R	Recovery	
110-56-5	1-4-Dichlorobutane	, R	Recovery	
,		,		

RAS

Page 30 Received: 05/13/86

SAMPLE 1D 860034

stin Results by Sample - Austin

Work Order # 86-05-072 Continued From Above

NAME SW846 halogenated vols. Category

FRACTION OGA TEST CODE SW8010 Date & Time Collected 05/12/86

460-00-4

% Recovery 1-Bromo-4-fluorobenzene

NOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at detection limit DET LIMIT = DETECTION LIMIT

NA = not analyzed

\* = less than 5 times the detection limit

N\A= not available

Received: 05/13/86 Page 31

REPORT Results by Sample Austin RAS

Work Order # 86-05-072

SAMPLE 1D 860034

NAME SW846 aromatic volatiles FRACTION 06B TEST CODE SW8020 Date & Time Collected 05/12/86

Category

**MCL** VERIFIED

> 리 ANALYST INSTRMT

FILE #

INJECTED 05/24/86

CAS#

UNITS

COMPOUND RESULT DET LIMIT Š

Benzene

500 500

Q

Toluene

108-88-3

100-41-4

108-90-7

71-43-2

Ethylbenzene

Chlorobenzene

30 2

100

p-Xylene

106-42-3

7

108-38-3

127

95-47-6

105-46-7

541-73-1

95-50-1

m-Xylene

o-Xylene

1,4-Dichlorobenzene

1, 3-Dichlorobenzene

1, 2-Dichlorobenzene

200

S

100 Q Z

40 2

50 Ñ

20 뒫

SURROGATES

99% recovery a, a, a-Trifluorotoluene

8-80-86

NOTES AND DEFINITIONS FOR THIS REPORT. = DETECTION LIMIT DET LIMIT

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SAMPLE 1D 860034

RAS - Austin

Results by Sample

REPORT

FRACTION 06B TEST CODE SW8020 Date % Time Collected 05/12/86

Work Order # 86-05-072 Continued From Above

NAME SW846 aromatic volatiles Category

> \* = less than 5 times the detection limit ND = not detected at detection limit N\A = not available NA = not analyzed

LAB # 86-05-078	CERTIFIED BY CONTACT FRENCH	times the detection limit lues ranges between for this analysis on the acceptable limits indicating	ed on this report
ytical Serv REPORT 06/20/86 15:06:28	PREPARED Radian Analytical Services BY 8501 MoPac Blvd. P. O. Box 9948 Austin, Texas 78766 ATTEN PHONE (512) 454-4797	Footnotes and Comments  * Indicates a value less than 5 tim Potential error for such low values 50 and 100%.  @ Indicates that spike recovery for specific matrix was not within acce an interferent present.	Analytical Serv TEST CODES and NAMES used on this report DRY WI Dry weight of solid sample IFB BS BNA Screen by IFB method MS 608 Pesticides & PCBs by GC/MS SWB27A CCMS Acid Semivol-SWB46 SWB27B GCMS B/N Semivol-SWB46 SWB46E Extraction for SW-846 B270
Ana 1	an Corporation  y French  in, Texas  I 4 SAMPLES 10  ral Dynamics Plant 4, Bldg 4  in, Texas	t 4 FDTA 6 /86  Ex 736772696  027-27-40  r separate cover	SAMPLE IDENTIFICATION         Analytical           8450027 Soil         DRY WT Dry           8650030 Soil         IFB BS BNA           8650031 Soil         MS 60B Pes           8650032 Soil         SWB27A CCM           8650033 Soil         SWB27B GCM           8650034 Soil         SWB27B GCM           8650034 Duplicate Analysis         SWB46E Ext           8650034 Duplicate Analysis         SWB46E Ext
PAGE 1 RECEIVED: 05/14/86	REPORT Radi TO Larr ATTEN CLIENT PLAN COMPANY GENE FACILITY OEHL	WORK ID Plant TAKEN 5/12/ TRANS Fed E TYPE Soil P. O. # 212-0 INVOICE UNDER	CAMPLE II 01 850027 Sc 02 860033 Sc 03 860031 Sc 05 860032 M 05 860034 Sc 07 860034 Du 09 Reagent II 09 Reagent II

LAB # 86-05-078

Analytical Serv REPORT RESULTS BY TEST

TEST CODE	Sample 01 (entered units)	Sample 02 (entered units)	Sample 03 (entered units)	Sample 04 (entered units)	Sample 05 (entered units
DRY_WT	œ	10	6	18	17
IFB BS	05/14/86	05/14/86	05/14/86	05/14/86	05/14/86
	05/15/86	05/15/86	05/15/86	05/15/86	05/15/86
TEST CODE	Sample Ok	Sample 07	Sample OR	Sample 00	Cample 10
default units	(entered units)	(entered units)	(entered units)	(entered units)	Centered units
DRY WI	89				
FB_BS	05/14/86				
date complete SWB46E	05/15/86	05/15/86	05/15/86	05/15/85	05/15/86
date completed					

NAME Pesticides & PCBs by GC/MS LAB # 86-05-078 Category FRACTION OIA TEST CODE MS 608 Date & Time Collected 05/12/86 Analytical Serv REPORT Results by Sample SAMPLE ID 860029 Soil PAGE 3 RECEIVED: 05/14/86

VERIFIED BY LAK COMPOUNDS DETECTED O	COMPOUND	alpha BHC ND	beta BHC ND	gamma BHC ND	delta BHC ND	PCB-1242 ND	PCB-1254 ND	PCB-1221 ND	PCB-1232 ND	PCB-1248 ND	PCB-1260 ND	PCB-1016 ND	toxaphene ND	
ANALYST	SCAN EPA	102P	103P	104Р	105P	106P	107P	108P	109P	110P	1116	112P	113P	
	NPDES	2P	ЭБ	4 <sub>P</sub>	5P	18P	19P	20P	21P	22P	23P	24P	25P	
<u>05/15/86</u> <u>05/22/86</u>	RESULT	QN	Q	Q.	QN	QN	Q	QN	Q Z	QN	QN	QN	QN	ÛN
DATE EXTRACTED DATE INJECTED	ann	aldrin	dieldrin	chlordane	4, 4'-DDT	4, 4'-DDE	4, 4'-DDD	endosulfan	endosulfan	fan sulfate	endrin	in aldehyde	heptachlor	heptachlor epoxide
70	COMPOUND							alpha	beta	endosulfan		endrin		heptact
	ЕРА СОМРО	ВЯР	d06	91P	92P	d£6	94P	95P 95p	96P beta	97P endosul	a.e.o	99P endr	100P	101P heptach
DATA FILE SCUOSO79C01 DA		1P 89P	10P 90P	<b>6P</b>	7P	d56 d8 <b>13</b>	<b>d</b> 6				146 935		16P 103P	

LAB # 86-05-078	608 NAME Pesticides & PCBs by GC/MS
Continued From Above	6 Category
Analytical Serv	FRACTION O1A TEST CODE MS 608
Results by Sample	Date & Time Collected 05/12/86
PAGE 4 RECEIVED: 05/14/86	SAMPLE ID 860029 Soil

AM) DEFINITIONS FOR THIS REPORT NOTES

110 = not detected at EPA detection limit method 625, (Federal Register, 12/3/79) All results reported in micrograms/liter unless otherwise specified. SCAN = scan number on chromatogram

Parabasasa Tradesia de Labasasasa Praesia de Praesia de Sasasas de Praesia de Praesia de Praesia de Praesia de

FRACTION 01A TEST CODE SW827A NAME GCMS Acid Semivol-SW846 Date & Time Collected 05/12/86 Analytical Serv REPORT Results by Sample SAMPLE ID 860029 Soil PAGE 5 RECEIVED: 05/14/86

LAB # 86-05-078

WJL VERIFIED BY LAK 5100 COMPOUNDS DETECTED O	COMPOUND	4-nitrophenol ND	2,4-dinitrophenol ND	2-methyl-4,6-dinitrophenol ND	pentachlorophenol ND	phenol ND		
ANALYST INSTRUMENT	SCAN EPA	58A	59A	60A	64A	65A		
I	NPDES SCAN	7A	SA	4 4	9 4	104		
<u>05/15/86</u> 05/22/86	RESULT	QN	QN	2	QN	QN	Q	
DATE EXTRACTED DATE INJECTED	COMPOUND	2, 4, 6-trichlorophenol	4-chloro-3-methylphenol	2-chlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2-nitrophenol	
DATA FILE <u>SCUOSO78CO1</u> IC FACTOR 37	_							ERIES
11LE 50	EPA EPA	21A	22.A	24A	314	34.4	574	RECOV
DATA FILE CONC. FACTOR	NPDES SCAN	11A	8 A	1. A	2A	34	6A	SURROGATE RECOVERIES
၁	Z			7	13	3		ß

ODE COMPOUND RESULT	AS1 d5-phenal 55	452 2-fluorophenol 45	A53 2, 4, 6-tribromophenol 130	AS4 d3-phenol
SCAN CODE	379	272	983	
S	'''	( 0)	αl	

	05/14/86
PAGE 6	RECEIVED:

Analytical Serv REPORT Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE 1D 860029 Soil

FRACTION 01A TEST CODE SW827A Date & Time Collected 05/12/86

NAME GCMS Acid Semivol-SW846 Category

NOTES AND DEFINITIONS FOR THIS REPORT

SCAN = scan number or retention time on chromatogram.

All results reported in ug/kg unless otherwise specified.

otherwise specified. SL = detected in reagent blank; background subtraction not performed. 110 = not detected at detection limit of 1 ug/g, unless

J = estimated value; less than method detection limit.

Minimum detection indicates dilution of sample if greater than one (1). limits should be multiplied by conc. factor.

LAB # 86-05-078	NAME GCMS B/N Semivol-SW846 Category	WJL VERIFIED BY LAK 5100 COMPOUNDS DETECTED 1	COMPOUND	N-nitrosodimethylamine ND	N-nitrosodiphenylamine ND	N-nitrosodi-n-propylamine ND	bis(2-ethylhexyl)phthalate 2500	butyl benzyl phthalate ND	di-butyl phthalate ND	di-n-octyl phthalate ND	diethyl phthalate ND	dimethyl phthalate ND	benzo(a)anthracene A <u>ND</u>	benzo(a)pyrene <u>ND</u>	benzo(b)fluoranthene * NI)	benzo(k)fluoranthene * ND	chrysene A <u>ND</u>	acenaphthylene <u>NU</u>	anthracene " ND
<b>.</b>	)E SW827B	ANALYSTINSTRUMENT	I EPA	618	62B	83B	899	67B	889	698	708	718	72B	738	748	758	76B	778	783
REPORT Sample	Collected 05/12/86	AP	NPDES SCAN	41B	43B	428	138 1520	158	268	298	248	258	58	89	7.8	9.8	188	28	38
lts by	ION OIA & Time Col	05/15/86 05/22/86	RESULT N	QN	Q	QN	QN	QN	QN	QN	QN	QN	GN	QN	QN	Q	QN	QN	QN
Analytical Serv Resu	FRACTION 01A Date & Time C	DATE EXTRACTED O	COMPOUND	acenaphthene	benzidine	1, 2, 4-trichlorobenzene	hexachlorobenzene	hexachloroethane	bis(2-chloroethyl)ether	2-chloronaphthalene	1, 2-dichlorobenzene	1, 3-dichlorobenzene	1, 4-dichlorobenzene	3,3'dichlorobenzidine	2,4-dinitrotoluene	2,6-dinitrotoluene	1,2-diphenylhydrazine	fluoranthene	henyl phenyl ether
14/86	029 Soil	5CU05078C01	ЕРА	18	5.8	88 1,2,	9.8	12B	18B bis(2	203	258 1	263 1	27B 1	28B 3, 3	358	35B	37b 1,2	39B	40B 4-chlorophenyl
PAGE 7 RECEIVED: 05/14/86	SAMPLE ID 860029 Soil	DATA FILE CONC. FACTOR	SCAN	1 B	4.B	46B	33B	368 1	118 1	16B 2	208 2	218 2	22B 2	20B	27B 3	38E 3	29B 3	31B 3	178 4
PAGE 7 RECEIVE	SAME	I CONC	NPDES	-	.1	4	8	36	7	2 13		21	Ö	М	3,	35	50	5.	***

## CORPORATION

LAB # 86-05-078 Continued From Above	B NAME GCMS B/N Semivol-SW846 Category	benzo(ghi)perylene ND	fluorene ND	phenanthrene B ND	dibenzo(a,h)anthracene ND	indena(1,2,3-cd)pyrene ND	Dyrene ND								
ORT	FRACTION O1A TEST CODE SW827B Date & Time Collected 05/12/86	798	80B	818	828	838	848								
REPORT Sample	TEST llected	88	328	44B	198	378	45B								
Serv Results by Sample	ION OIA K Time Co	QN	QN	Q	QN	QN	QN	QN	Q		RESULT	e 97	100	1 55	1
Analytical S R	FRACT Date	phenyl ether	pyl)ether	y)methane	butadiene	entadiene	isapharone	naphthalene	nitrobenzene			d5-nıtrobenzene	robiphenyl	d14-terphenyl	d10-biphenyl
	1011	4-bromophenyl phe	bis(2-chloroisopropyl)e	bis(2-chloroethoxy)met	hexachlorobutad	hexachlorocyclopentad	.1	e u	nit	ES	COMPOUND	d5-n1	2-fluorobip	d14	d 1
)5/14/86	360029	41B 4	42B bi	43B b	52B	538	54B	558	26B	RECOVERIES	CODE	BS1	<b>B</b> S2	BS3	BS4
PAGE 8 RECEIVED: 05/14/86	SAMPLE ID 860029 S011	148	128	103	348	358	388	398	408	SURROGATE A	SCAN CODE	7 1	092	1339	

NOTES AND DEFINITIONS FOR THIS REPORT.

All results reported in  $\frac{\log/kq}{\log/kq}$  unless otherwise specified. By  $\approx$  not detected at detection limit of 1 ug/g, unless otherwise specified igh concentrations. \* = henzo(b)fluoranthene and benzo(k)fluoranthene co-elute. SCAM = scan number or retention time on chromatogram. enzo(a)anthracene and chryseneco-elute i.

	05/14/8
AGE 9	RECEIVED:

REPORT Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

2

SAMPLE 1D 860029 Soil

NAME GCMS B/N Semivol-SW846 FRACTION OIA TEST CODE SW827B Date & Time Collected 05/12/86

Category

Minimum detection B= anthracene and phenanthrene co-elutetogether in high concentrations. BL= detected in reagent blank; background subtraction not performed. indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. linits should be multiplied by conc. factor.

NAME Pesticides & PCBs by GC/MS LAB # 86-05-078 Category TEST CODE MS 608 Date & Time Collected 05/12/86 REPORT Results by Sample FRACTION 02A Analytical Serv SAMPLE 1D 860030 Soil 05/14/86 RECEIVED: PAGE 10

AK O Q 2 2 2 2 g 皇 일 呈 밁 밁 RESULT VERIFIED BY COMPOUNDS DETECTED alpha BHC beta BHC gamma BHC delta BHC PCB-1242 PCB-1254 PCB-1221 PCB-1232 PCB-1248 PCB-1260 PCB-1016 toxaphene COMPOUND MJL EPA 102P 103P 104P 105P 106P 107P 108P 109P 110P 111P 112P 113P ANALYST NPDES SCAN 21P 임 20P 22P 23P 24P 25P 9 4<sub>P</sub> **SP 18**P 199 ATE EXTRACTED 05/15/86 DATE INJECTED 05/22/86 2 일 S 밁 RESULT S N S Q S 2 S 윋 Q DATE EXTRACTED aldrin dieldrin chlordane 4, 4'-DDE 4, 4'-DDD alpha endosulfan beta endosulfan endosulfan sulfate endrin endrin aldehyde heptachlor epoxide 4, 4'-DDT heptachlor COMPOUND SCU0507BC02 EPA 91P 929 96P d26 989 ძბბ 1005 101P 892 90P 939 94P d\$6 DATA FILE FACTOR NPDES SCAN CONC 1. 10P 9 11P 126 14P 14P 15P 16P 17P **6P** 4 d d

PAGE 11 RECEIVED: 05/14/85

Results by Sample Analytical Serv

REPORT

LAB # 86-05-078 Continued From Above

SAMPLE ID 860030 Soil

FRACTION OZA TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected 05/12/86

AND DEFINITIONS FOR THIS REPORT. NOTES SCAN = scan number on chromatogram.

180 = not detected at EPA detection limit method 625, (Federal Register, 12/3/79) All results reported in micrograms/liter unless otherwise specified.

CONTROL CONTROL OF THE PROPERTY OF THE PROPERT

RECEIVED: 05/14/86

REPORT Results by Sample Analytical Serv

LAB # 86-05-078

SAMPLE ID 860030 Soil

FRACTION 02A TEST CODE SW827A Date & Time Collected 05/12/86

Category

NAME GCMS Acid Semivol-SW846

DATA FILE SCU05078C02 CONC FACTOR 36

DATE EXTRACTED 05/15/86
DATE INJECTED 05/22/86

ANALYST INSTRUMENT

Z Z 5100

VERIFIED BY LAK COMPOUNDS DETECTED

NPDES SCAN RESULT

EPA **58A 59A** 

74

윋

2, 4, 6-trichlorophenol

COMPOUND

EPA

NPDES SCAN

21A

11A

SZA

**8A** 

24A

4

31A

SP

140

346

Ø

574

64

4-chloro-3-methylphenol

54

Ž

2

4-nitrophenol

RESULT

COMPOUND

밁

2,4-dinitrophenol

2

2-methyl-4, 6-dinitrophenol **60A** 

44

일

2-chlorophenol

94

2

2,4-dichlorophenol

10A

N<sub>O</sub>

2,4-dimethylphenol

2

2-nitrophenol

64A **65A** 

pentachlorophenol

밁

phenol

일

SURROGATE RECOVERIES

COMPOUND SCAN CODE

15-phenol

RESULT

2-fluorophenol

ASS

231

AS1

394

AS3

492

**AS4** 

2, 4, 6-tribromophenol

123

d3-phenol

PAGE 13 RECEIVED: 05/14/86

Analytical Serv Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE 1D 860030 Soil

FRACTION OZA TEST CODE SW827A Date & Time Collected 05/12/86

Category

NAME GCMS Acid Semivol-SW846

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

ug/kg unless otherwise specified. All results reported in

otherwise specified  $80~\approx$  not detected at detection limit of 1 ug/g, unless otherwise spec  $\rm SL~\approx~detected$  in reagent blank; background subtraction not performed.

J = estimated value, less than method detection limit.

Minimum detection indicates dilution of sample if greater than one (1). CCNC. FACTOR:

linits should be multiplied by conc. factor.

ORPORATION

KARAN MEROPORORA TAKAN MALANSASASA MANANGAN MANANGAN MEROPORA TAKAN KANGANSA MANANGAN MENANGAN MENANGAN MENANGAN

LAB # 86-05-078

REPORT

Analytical Serv

LAX 2 2 220 Q N 일 3100 950 S RESULT 문 Semivol-SW846 COMPOUNDS DETECTED VERIFIED N-nitrosodi-n-propylamine butyl benzyl phthalate diethyl phthalate ∢ benzo(a)pyrene ¢ ~ N-nitrosodimethylamine N-nitrosodiphenylamine bis(2-ethylhexyl)phthalate di-butyl phthalate di-n-octyl phthalate dimethyl phthalate acenaphthylene anthracene benzo(a)anthracene benzo(b)fluoranthene benzo(k)fluoranthene chrysene Categoru NAME GCMS B/N COMPOUND L M 5100 TEST CODE SW827B Date & Time Collected 05/12/86 61B 66B 67B 71B 74B 76B 77B EPA 62B 63B **68**B 69B 70B 72B 73B 75B 788 ANALYST INSTRUMENT 538 NPDES SCAN 1522 1191 Results by Sample 13B 41B 43B 42B 15B 26B 29B 24B 25B **6**B **7**B 183 28 38 53 05/15/86 05/22/86 FRACTION 02A N Q N 일 2 g S Q 2 2 일 2 문 2 2 윋 S RESULT DATE EXTRACTED DATE INJECTED acenaphthene 1, 2, 4-trichlorobenzene hexachlorobenzene hexachloroethane 4-dichlorobenzene 2,6-dinitrotoluene fluoranthene benzidine bis(2-chloroethyl)ether 2-chloronaphthalene 1, 2-dichlorobenzene 3'dichlorobenzidine 2,4-dinitrotoluene 1,2-diphenylhydrazine phenyl ather 1, 3-dichlorobenzen COMPOUND 4-chlorophenyl 500050,8002 ന് SAMPLE 1D 860030 Soil 05/14/86 40B EPA 263 35B 363 37B 393 1 B **5B** 123 183 203 253 27B 288 86 93 DATA FILE NPDES SCAN PAGE 14 RECEIVED: 218 22B 23B 27B 388 29B 31B 17B 1 B 43 463 SOB 368 11B 16B ·20B COMC 142 7

S

2

2

Q N

2

2

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PAGE 15 RECEIVED: 05/14/86	05/14/86	Analytical	Serv Results by Sample	REPORT Sample		LAB # 86-05-078 Continued From Above
SAMPLE 1D 860030 Soil	860030	FR	ON OZA Time Col	ACTION O2A TEST CODE SW827B	SW827B 12/86	NAME GCMS B/N Semivol-SW846 Category
148	418 4	4-bromophenyl phenyl ether	QN	88	798	benzo(ghi)perylene ND
12B	428 bi	bis(2-chloroisopropyl)ether	Q	328	808	fluorene NO
108	433 b	bis(2-chloroethoxy)methane	ON	443	818	phenanthrene B ND
34B	523	hexachlorobutadiene	QN	198	828	dibenzo(a,h)anthracene ND
358	538	hexachlorocyclopentadiene	Q	378	838	indeno(1,2,3-cd)pyrene ND
388	54B	isophorone	Q	45B	848	pyrene ND
398	558	naphthalene	QN			
403	26B	nitrobenzene	QN			
SURROGATE	RECOVERIES	ES				
SCAN 5	н соре	COMPOUND	RESULT			

## NOTES AND DEFINITIONS FOR THIS REPORT

70

d5-nitrobenzene\_

114

2-fluorobiphenyl

382

761

143

**BS1** 

49B

383

1339

354

50

d14-terphenyl

d10-biphenyl

140~% not detected at detection limit of 1 ug/g, unless otherwise specified igh concentrations All results reported in <u>ug/kg</u> unless otherwise specified \* = henzo(b)fluoranthene and benzo(k)fluoranthone co-elute. SCAN = scan number or retention time on chromatogram. A .\_\_enio(a)anthracene and chryseneco-elute i FAGE 15 RECEIVED: 05/14/86

Analytical Serv REPORT Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE ID 860030 Soil

FRACTION 02A TEST CODE SW827B Date % Time Collected 05/12/86

NAME GCMS B/N Semivol-SW846 Category

Minimum detection  $\mathbb{S}$  = anthracene and phenanthrene co-elutetogether in high concentrations BL = detected in reagent blank; background subtraction not performed indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. linits should be multiplied by conc. factor. CCNC. FACTOR:

LAB # 86-05-078	NAME Pesticides & PCBs by GC/MS Category	WUL VERIFIED BY LAK COMPOUNDS DETECTED	COMPOUND	alpha BHC ND	beta BHC ND	gamma BHC ND	delta BHC ND	PCB-1242 ND	PCB-1254 ND	PCB-1221 ND	PCB-1232 ND	PCB-1248 ND	PCB-1260 ND	PCB-1016 ND	toxaphene ND	
REPORT Sample	FRACTION O3A TEST CODE MS 608 Date & Time Collected 05/12/86	ANALYST	NPDES SCAN EPA	2P 102P	3P 103P	4P 104P	5P 105P	18P 106P	19P 107P	20P 108P	21P 109P	22P 110P	23P 111P	24P 112P	25P 113P	
Analytical Serv Results by	FRACTION 03A Date & Time Col	DATE EXTRACTED <u>05/15/86</u> DATE INJECTED <u>05/22/86</u>	COMPOUND RESULT N	aldrin ND	dieldrin ND	chlordane ND	4, 4'-DDT ND	4, 4' -DDE ND	4, 4'-DDD ND	alpha endosulfan <u>ND</u>	beta endosulfan ND	endosulfan sulfate ND	endrin ND	endrin aldehyde ND	heptachlor ND	heptachlor epoxide ND :
PAGE 17 RECEIVED: 05/14/86	SAMPLE ID 860031 Soil	DATA FILE <u>SCUOSO78CO3</u> CONC. FACTOR	NPDES SCAN EPA C	1P 65P	10P 90P	6P 91P	7P 92P	d59 d8	9P 94P	11P 95P	12P 96P	14P 97P e	14P 98P	15P 99P	16P 160P	17P 101P h

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SAMPLE ID 860031 Soil

serv Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

FRACTION 03A TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected 05/12/86 Category

AND DEFINITIONS FOR THIS REPORT. NOTES

SCAN = scan number on chromatogram.

140 = not detected at EPA detection limit method 625, (Federal Register, 12/3/79) All results reported in micrograms/liter unless otherwise specified.

RECEIVED: 05/14/86

Analytical Serv REPORT Results by Sample

LAB # 86-05-078

SAMPLE ID 860031 Soil

FRACTION 03A TEST CODE SW827A Date & Time Collected 05/12/86

NAME GCMS Acid Semivol-SW846 Category

DATA FILE SCUOSO78CO3

**ANALYST** 

5100

VERIFIED BY COMPOUNDS DETECTED

LAK

2

2,4-dinitrophenol

S

2-methyl-4,6-dinitrophenol

**60A** 

44

2

2-chlorophenol

64A

9 9

2

2, 4-dichlorophenol

**65A** 

10A

S

2,4-dimethylphenol

344

34

574

49

N

2-nitrophenol

S

pentachlorophenol

ON

4-nitrophenol

RESUL.T

COMPOUND

EPA

NPDES SCAN

RESULT

COMPOUND

EPA

21A

**58A** 

7A

일

2, 4, 6-trichlorophenol

4-chloro-3-methylphenol

**59A** 

54

밁

phenol

DATE EXTRACTED 05/15/86
DATE INJECTED 05/22/86

INSTRUMENT

NPDES SCAN 11A 24 88 1 A

22A

24A

31A

SURROGATE RECOVERIES

COMPOUND SCAN CODE

RESULT

d5-phenol 451 (193 (193 2-fluorophenol 482 231 2, 4, 6-tribromophenol **A B B** 583

122

44

d3-phenol

PAGE 20 RECEIVED: 05/14/86

serv Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

SAMPLE ID 860031 Soil

FRACTION 03A TEST CODE SW827A Date & Time Collected 05/12/86

NAME GCMS Acid Semivol-SW846 Category

> AND DEFINITIONS FOR THIS REPORT. NOTES

SCAN = scan number or retention time on chromatogram.

All results reported in ug/kg unless otherwise specified. otherwise specified

NO = not detected at detection limit of 1 ug/g, unless otherwise spec SL = detected in reagent blank, background subtraction not performed.

J = estimated value, less than method detection limit.

Minimum detection indicates dilution of sample if greater than one (1). factor limits should be multiplied by conc. CENC. FACTOR:

44 - 252222 - 155653 - 155653 - 156623 - 156623 - 166623 - 166623 - 166623 - 166623 - 16663 - 16663 - 16663 - 16663

LAB # 86-05-078	SW827B NAME GCMS B/N Semivol-SW846. 2786 Category	YST WJL VERIFIED BY LAK ENT 5100 COMPOUNDS DETECTED 1	EPA COMPOUND RESULT	61B N-nitrosodimethylamine ND	62B N-nitrosodiphenylamine ND	63B N-nitrosodi-n-propylamine <u>NO</u>	66B bis(2-ethylhexyl)phthalate	67B butyl benzyl phthalate NO	68B di-butyl phthalate 1500	69B di-n-octyl phthalate NO	70B diethyl phthalate ND	71B dimethyl phthalate ND	72B benzo(a)anthracene A <u>ND</u>	73B benzo(a)pyrene ND	74B benzo(b)fluoranthene * ND	75B benzo(k)fluoranthene * ND	76B chrysene A NO	77B acenaphthylene ND	78B anthracene P ND
REPORT Sample	TEST CODE SILECTED OS/12	ANALYST INSTRUMENT	NPDES SCAN E	41B 6	43B 6	428 6	13B 6	158 6	26B 1191 6	29B 6	248 7	25B 7	5B 7	2 89	78 7	7 86	183 7	2B 7	3B 7
Analytical Serv Results by	FRACTION 03A TEST CODE SWB2 Date & Time Collected 05/12/86	DATE EXTRACTED <u>05/15/86</u> DATE INJECTED <u>05/22/86</u>	COMPOUND RESULT N	acenaphthene ND	benzidine ND	1, 2, 4-trichlorobenzene ND	hexachlorobenzene ND	hexachloroethane ND	2-chloroethyl)ether ND	2-chloronaphthalene ND	1,2-dichlorobenzene ND	1,3-dichlorobenzene ND	1,4-dichlorobenzene ND	3'dichlorobenzidine ND	2,4-dinitrotoluene ND	2,6-dinitrotoluene ND	1,2-diphenylhydrazine ND	fluoranthene ND	henyl phenyl ether <u>ND</u> ;
PAGE 21 RECEIVED: 05/14/86	SAMPLE ID 860031 Soil	TLE <u>\$CU05078C03</u> TOR 37	in EPA	13	SB	88 1,2,	86	128	185 bis(2	208 2	255 1	268 1	278 1	286 3, 3	35B	363	378 1,2	398	40B 4-chlorophenyl
PAGE 21 RECEIVED:	SAMPLE II	DATA FILE CONC. FACTOR	NPDES SCAN	18	4B	468	338	3¢B	7	991 14	<b>9</b>	218	22B	23B	27B	288	38B	318	178

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PAGE :	22 VED:	PAGE 22 RECEIVED: 05/14/86		Analytical Serv Results by Sample	REPORT Sample		LAB # 86-05-078 Continued From Above
SAMPLI	E 10	SAMPLE ID 850031 Soil	Soil	FRACTION 03A TEST CODE SW82 Date & Time Collected 05/12/86	TEST CODE SW827B	SW827B 12/86	NAME GCMS B/N Semivol-SW846 Category
148		41B	4-bromophenyl p	phenyl ether ND	88	79B	benzo(ghi)perylene <u>ND</u>
12B		428	bis(2-chloroisopropyl)et	oropyl)ether NO	328	вов	fluorene ND
108		433	bis(2-chloroethoxy)meth	loxy)methane ND	448	818	phenanthrene B <u>ND</u>
348		528	hexach]	hexachlorobutadiene ND	198	828	dibenzo(a,h)anthracene ND
358		538	hexachlorocyclopentadi	lopentadiene ND	37B	838	indeno(1, 2, 3-cd)pyrene ND
388		543		isophorone ND	45B	848	Dyrene ND
39B		558		naphthalene ND			
40B		55B	_	nitrobenzene <u>ND</u> i			
SURROGATE	GATE	RECOVERIES	RIES				
7	SCAN	SCAN CODE	COMPOUND	4D RESULT			
1	498	<u>3</u> BS1	d 5-	d5-nitrobenzene 80			
50	761	382	2-4	2-fluorobiphenyl 109			
	1339	583	•	d14-terphenyl <u>63</u>			
		354		d10-biphenyl			
() 	<u>:</u>		; ;	+ 000			

NOTES AND DEFINITIONS FOR THIS REPORT.

 $\mathrm{MU} = \mathrm{not}$  detected at detection limit of 1 ug/g, unless otherwise specified. igh concentrations. All results reported in <u>ug/kg</u> unless otherwise specified. + = henzo(b)fluoranthene and benzo(k)fluoranth~ne co~elute. SCAN = scan number or retention time on chromatogram. enzo(a)anthracene and chryseneco-elute i PAGE 23 RECEIVED: 05/14/85

Analytical Serv RE

Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE ID 860031 Soil

מט אח ביוויבאר

NAME GCMS B/N Semivol-SW846

Category

Date

FRACTION 03A TEST CODE SW827B NA Date & Time Collected 05/12/86  $\mathrm{SL} \Rightarrow \mathsf{detected}$  in reagent blank, background subtraction not performed J = estimated value; less than method detection limit.

 $3\,$  = anthracene and phenanthrene co-elutetogether in high concentrations

indicates dilution of sample if greater than one (1). linits should be multiplied by conc. factor. CCNC. FACTOR

Minimum detection

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Analytical Serv REPORT Results by Sample

LAB # 86-05-078

SAMPLE ID 860032 Soil

FRACTION 04A TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected 05/12/86 Category

WUL COMPOUNDS DETECTED BY LAK COMPOUND RESULT alpha BHC ND beta BHC ND gamma BHC ND delta BHC ND	
ALYST EPA 102P 103P 105P	i i
APDES SC 3P 4P 5P	Ç
05/15/86 05/22/86 05/22/86 ND   ND   ND   ND   ND   ND   ND   ND	
EXTRACTED EINJECTED aldrin dieldrin chlordane 4,4'-DDT	
СОМР	
DATA FILE <u>SCUOSO78CO4</u> IC. FACTOR  ES SCAN EPA  1P 89P  OP 90P  7P 92P	0 0
0 d u	00

RESULT	alpha BHC ND	beta BHC ND	gamma BHC ND	delta BHC ND	PCB-1242 ND	PCB-1254 ND	PCB-1221 ND	PCB-1232 ND	PCB-1248 ND	PCB-1260 ND	PCB-1016 ND	toxaphene ND	
COMPOUND	alp	9 <b>q</b>	hep	de]	)d	)d	PC	PC	Ъ	PC	PC	to	
I EPA	102P	103P	104P	105P	106P	107P	108P	109P	110P	1118	112P	113P	
NPDES SCAN	ZP	e e	44	Ę,	18P	19P	20P	21P	22P	23P	24P	25P	
RESULT	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN
_	aldrin	dieldrin	chlordane	4, 4'-DDT	4,4'-DDE	4, 4'-DDD	endosulfan	endosulfan	n sulfate	endrin	aldenyde	heptachlor	r epoxide
COMPOUND							alpha e	beta e	endosulfan		endrin alde	ح	heptachlor
EPA	858	909	91P	92P	93P	94P	a: 6	96P	97P	389	455	100P	101P
S SCAN	0	0	•	0	•	•	0	0	•	0	•	0	2
NPBES	<u>п</u>	10P	d:9	ት 7 1	ե 152	d6	116	12P	14P	14P	15P	16P	17P

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REPORT Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

SAMPLE 1D 860032 Soil

FRACTION 04A TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected 05/12/86

AND DEFINITIONS FOR THIS REPORT. NOTES

SCAN = scan number on chromatogram.

(4) = not detected at EPA detection limit method 625, (Federal Register, 12/3/79) All results reported in micrograms/liter unless otherwise specified.

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PAGE 26	(ECE IVED:

Analytical Serv REPORT Results by Sample

LAB # 86-05-078

SAMPLE ID 860032 Soil

FRACTION 04A TEST CODE SW827A Date & Time Collected 05/12/86

NAME GCMS Acid Semivol-SW846 Category

DATE E	DATE
5CU0507BC04	39
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DATE EXTRACTED 05/15/86 DATE INJECTED 05/22/86

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YST WUL

VERIFIED BY LAK COMPOUNDS DETECTED 0 2

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COMPOUND	4-nitrophenol	2,4-dinitrophenol	2-methyl-4,6-dinitrophenol	pentachlorophenol	phenol		
EPA	58A	59A	60A	64A	<b>65A</b>		
NPDES SCAN	7A	9. 9.	4.4 4.9	96	10A		
RESULT	ND	QN	ON	ND	QN	QN	
COMPOUND	2, 4, 6-trichlorophenol	4-chloro-3-methylphenol	2-chlorophenol	2, 4-dichlorophenol	2, 4-dimethylphenol	2-nitrophenol	
ЕРА	21A	224 4	24A	31A	344	57A	
SCAN							
NPDES	114	8	1.4	2A	34	6A	ָּטְׁמָטְּיִי טיינים
angan aktar	<u> እ</u> ያለያለ	- <u>ኤ</u> ዮኔሎ	<b>7</b> 	_	54	<b>~</b> }/ <b>~</b> ].^	

## SURROGATE RECOVERIES

COMPOUND RESULT	d5-phenol 71	2-fluorophenol71	2, 4, 6-tribromophenol 106	d3-phenol
CODE	AS1	A.S.2	ASS	AS4
SCAN CODE	330	274	581	

PAGE 27 RECEIVED: 05/14/86

Serv Resolts by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

SAMPLE ID 860032 Soi

FRACTION 04A TEST CODE SW827A Date & Time Collected 05/12/86

NAME GCMS Acid Semivol-SW846 Category

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

ug/kg unless otherwise specified All results reported in

otherwise specified  $\Omega = not$  detected at detection limit of 1 ug/g, unless otherwise spec  $\Omega = not$  detected in reagent blank; background subtraction not performed.

Minimum detection indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. linits should be multiplied by conc. factor. CENC. FACTUR:

RESULT Semivol-SW846 VERIFIED BY COMPOUNDS DETECTED N-nitrosodimethylamine N-nitrosodiphenylamine N-nitrosodi-n-propylamine bis(2-ethylhexyl)phthalate phthalate phthalate di-butyl phthalate phthalate Þ Þ phthalate benzo(a)pyrene acenaphthylene benzo(a)anthracene chrysene benzo(b)fluoranthene benzo(k)fluoranthene anthracene Cateqoru NAME GCMS B/N butyl benzyl dimethyl di-n-octyl diethyl COMPOUND 5100 FRACTION 04A TEST CODE SW827B Date & Time Collected 05/12/86 EPA 61B 66B ANALYST INSTRUMENT 62B 63B 67B **68B** 69B 70B 71B 72B 73B 74B 75B 76B 77B **78B** NPDES SCAN 1520 1189 Results by Sample 13B 26B 41B 43B 42B 158 29B 25B 24B 183 58 6В 7.15 38 05/15/86 RESULT 윋 g S 2 욷 밁 2 일 2 2 밁 밁 밁 욷 일 2 DATE INJECTED DATE EXTRACTED acenaphthene benzidine 1, 2, 4-trichlorobenzene hexachlorobenzene hexachloroethane 2-chloronaphthalene 1,2-dichlorobenzene 1, 3-dichlorobenzene 1, 4-dichlorobenzene 3,3'dichlorobenzidine 2,4-dinitrotoluene s(2-chloroethyl)ether 2,6-dinitrotoluene 1,2-diphenylhydrazine fluoranthene 40B 4-chlorophenyl phenyl ether COMPOUND 5CU05078C04 39 SAMPLE ID 860032 Soil 05/14/86 EPA 13 123 26B 27B **SB** 88 93 183 20E 25B 283 35B 39E 378 393 DATA FILE CONC. FACTOR NPDES SCAN RECEIVED: 13 4B 463 33B 363 16B 20B 218 22B 20B 27B 28B 29B 318 1 1 B 17B 156 7

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LAB # 86-05-078

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PAGE 29 RECEIVED: 05/14/86	05/14/	Analytical 86	Serv Results by Sample	REPORT Sample		LAB # 86-05-078 Continued From Above
SAMPLE ID 860032 Soil	860032		FRACTION 04A TEST CODE SW82 Date & Time Collected 05/12/86	TEST CODE SW827B	E SW827B /12/86	NAME GCMS B/N Semivol-SWB46 Category
14B	41B	4-bromophenyl phenyl et	her ND	88	798	benzo(ghi)perylene <u>ND</u>
128	42B	bis(2-chloroisopropyl)eth	her ND	32B	808	fluorene ND
108	43B	bis(2-chloroethoxy)metha	ane NO	44B	818	phenanthrene B <u>ND</u>
348	52B	hexachlorobutadie	ene ND	198	828	dibenzo(a, h)anthracene ND
358	538	hexachlorocyclopentadie	ene ND	378	838	indeno(1,2,3-cd)pyrene ND
98E <b>7</b>	548	isophoro	one ND	45B	843	pyrene ND
86E 15	558	naphthale	ene ND			
40B	55B	nitrobenze	ene ND			
SURROGATE RECOVERIES	RECOVE	RIES				
SCAF	SCAN CODE	COMPOUND	RESULT			

## ROTES ARE DEFINITIONS FOR THIS REPORT

104

2-fluorobiphenyl

BSS

760

BS1

497

BS3

1337

BS4

d14-terphenyl

d10-biphenyl

61

d5-nitrobenzene\_

 $\Omega U = 0$  not detected at detection limit of 1 ug/g, unless otherwise specified. igh concentrations. All results reported in <u>ug/kg</u> unless otherwise specified. \* = henzo(b)fluoranthene and benzo(k)fluoranthane co-elute. SCAM = scan number or retention time on chromatogram. enzo(a)anthracene and chryseneco-elute i

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PAGE 30	-

Serv REPORT Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

SAMPLE ID 860032 Soi

NAME GCMS B/N Semivol-SW846 Category FRACTION 04A TEST CODE SW827B Date & Time Collected 05/12/86

Minimum detection

 $3\,$  = anthracene and phenanthrene co-elutetogether in high concentrations. = detected in reagent blank; background subtraction not performed.

indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. CONC. FACTOR:

linits should be multiplied by conc.

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LAB # 86-05-078	NAME Pesticides & PCBs by GC/MS Category	VERIFIED BY LAK COMPOUNDS DETECTED O	COMPOUND	alpha BHC ND	beta BHC ND	gamma BHC ND	delta BHC ND	PCB-1242 ND	PCB-1254 ND	PCB-1221 ND	PCB-1232 ND	PCB-1248 ND	PCB-1260 ND	PCB-1016 ND	toxaphene ND	
REPORT Sample	FRACTION 05A TEST CODE MS 608 Date & Time Collected 05/12/86	ANALYST	NPDES SCAN EPA	2P 102P	3P 103P	4P 104P	5P 105P	18Р 106Р	19P 107P	20P 108P	21P 109P	22P 110P	23P 111P	24P 112P	25P 113P	
Analytical Serv Results by Sample	FRACTION 05A Date & Time Col	DATE EXTRACTED 05/15/86 DATE INJECTED 05/22/86	COMPOUND RESULT N	aldrin ND	dieldrin ND	chlordane ND	4, 4'-DDT ND	4, 4'-DDE ND	4, 4 '-DDD ND	alpha endosulfan ND	beta endosulfan <u>ND</u>	endosulfan sulfate ND	endrin ND	endrin aldehyde NO	heptachlor ND	heptachlor epoxide ND :
PAGE 31 RECEIVED: 05/14/86	SAMPLE ID <u>860033 Soil</u>	DATA FILE SCUOSO78COS CONC. FACTOR	RPDES SCAN EPA C	1P 89P	10P 90P	6P 91P	7P 92P	деь .59	9P 94P	11P 95P	12P 96P	14P 97P e	14P 98P	15P 99P	16P 100P	17P 101P h

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Analytical Serv

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LAB # 86-05-078 Continued From Above

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Results by Sample

NAME Pesticides & PCBs by GC/MS

SAMPLE ID 860033 Soil

FRACTION OSA TEST CODE MS 608 Date & Time Collected 05/12/86

Category

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number on chromatogram.

All results reported in micrograms/liter unless otherwise specified. NO = not detected at EPA detection limit method 625, (Federal Register, 12/3/79).

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LAB # 86-05-078	NAME GCMS Acid Semivol-SW846 Category
Analytical Serv REPORT Results by Sample	FRACTION OSA TEST CODE SW827A Date & Time Collected 05/12/86
PAGE 33 RECEIVED: 05/14/86	SAMPLE ID 860033 Soil

BY <u>LAK</u> red <u>o</u>	RESULT	QN	ON	QN	QN	QN			
VERIFIED BY COMPOUNDS DETECTED	СОМРОИИВ	4-nitrophenol	2,4-dinitrophenol	2-methyl-4,6-dinitrophenol	pentachlorophenol	phenol			
MJL 5100				2-methy					
ANAL YST TRUMENT	EPA	58A	59A	<b>409</b>	64A	65A			
INS	NPDES SCAN	7A	5A	44	94	10A			
05/15/86 05/22/86	RESULT	QN	QN	QN	QN	QN	QN		RESULT
DATE EXTRACTED DATE INJECTED	сомРаима	2, 4, 6-trichlorophenal	4-chloro-3-methylphenol	2-chlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2-nitrophenol		COMPOUND
<u> 120</u>	JO	2,4,6	4-chlor		, S	í,		IES	CC
DR SCUO	EPA	21A	224	244	31A	ው የትይ	57A	RECOVERIES	SCAN CODE
DATA FILE <u>SCUOSO78COS</u> CONC. FACTOR <u>120</u>	NPDES SCAN	118	84	14	2A	34	99	SURROGATE	SCAN
່ວວ	IdN	-		7 1	61	-		SUF	

88

d5-phenol

451

333

2-fluorophenol

8

2, 4, 6-tribromophenol

463

<u>982</u>

484

452

279

d3-phenol

PAGE 34	Analytical Serv	REPORT	LAB # 86-05-078
RECEIVED: 05/14/86	Results by Sample	Sample	Continued From Above
SAMPLE 1D 860033 Soil	FRACTION 05A Date & Time Co	FRACTION 05A TEST CODE SW827A Date & Time Collected 05/12/86	NAME GCMS Acid Semivol-SW846

inued From Above # 86-05-078

Category

AND DEFINITIONS FOR THIS REPORT. NOTES

SCAN = scan number or retention time on chromatogram.

ug/kg unless otherwise specified. otherwise specified  $\mathrm{NU} = \mathrm{not}$  detected at detection limit of 1 ug/g, unless All results reported in

 $3L = \mathsf{detected}$  in reagent blank; background subtraction not performed. J = estimated value; less than method detection limit.

Minimum detection CCMC. FACTOR: indicates dilution of sample if greater than one (1). factor. linits should be multiplied by conc.

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LAB # 86-05-078

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Semivol-SW846 COMPOUNDS DETECTED VERIFIED BY N-nitrosodimethylamine N-nitrosodiphenylamine N-nitrosodi-n-propylamine bis(2-ethylhexyl)phthalate butyl benzyl phthalate di-butyl phthalate di-n-octyl phthalate diethyl phthalate dimethyl phthalate benzo(a)pyrene acenaphthylene benzo(a)anthracene benzo(b)fluoranthene chrysene benzo(k)fluoranthene anthracene Category NAME GCMS B/N COMPOUND 5100 TEST CODE SW827B Date & Time Collected 05/12/86 61B ANALYST INSTRUMENT EPA 62B 63B 66B 67B 69B 70B 71B 72B 73B 74B 753 76B 77B **68**B 788 NPDES SCAN 1190 Results by Sample 263 41B 43B 42B 138 15B 29B 24B 25B 18B **SB 6**B 7B 93 38 2B DATE EXTRACTED 05/15/86
DATE INJECTED 05/22/86 RESULT FRACTION 05A 2 S 2 일 S N 윋 2 g 2 2 밁 일 윋 acenaphthene benzidine 1, 2, 4-trichlorobenzene hexachlorobenzene hexachloroethane bis(2-chloroethyl)ether 2-chloronaphthalene 1,4-dichlorobenzene 2,4-dinitrotoluene 2,6-dinitrotoluene 1,2-dichlorobenzene 1, 3-dichlorobenzene 3, 3'dichlorobenzidine 1,2-diphenylhydrazine fluoranthene 4-chlorophenyl phenyl ether COMPOUND 5000507BC05 120 SAMPLE ID 860033 S011 RECEIVED: 05/14/86 EPA 40B 13 **5B** 83 123 183 20B 25B 263 273 288 35B 365 378 93 393 DATA FILE IC. FACTOR NPDES SCAN 13 100 CONC 46B 338 368 11B 168 208 213 22B <u> 3</u>3 27B **38**5 63 65 101 318 178 1**6**3

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ړ و.	SAMPLE 1D 860033 Soil	E009B 0	3 5011	FRACTION 05A TEST CODE SW82 Date & Time Collected 05/12/86	TEST CO	TEST CODE SW827B ected 05/12/86	NAME GCMS B/N Semivol-SW846 Category
	14B	418	4-bromophenyl phenyl	ether ND	88	798	benzo(ghi)perylene ND
	128	42B	bis(2-chloroisopropyl)e	ether ND	328	808	fluorene ND
	108	43B	bis(2-chloroethoxy)met	thane ND	44B 1089	3 <u>9</u> 81B	phenanthrene B 830
	34B	528	hexachlorobutad	diene ND	198	828	dibenzo(a,h)anthracene ND
	358	538	hexachlorocyclopentad	diene ND	378	838	indeno(1,2,3-cd)pyrene ND
7	388	548	isopho	orone ND	45B	843	Dynene ND
1	39B 599	99 553	naphtha	alene <u>2300</u>			
64	40B	55B	nitroben	nzene ND			
ינט	SURROCATE	E RECOVERIES	ERIES				
	3C.4	SCAN CODE	COMPOUND	RESULT			

# MOTES AND DEFINITIONS FOR THIS REPORT.

132

2-fluorobiphenyl\_

d14-terphenyl

E83

1337

19.54

d10-biphenyl

d5-nitrob≈nzene\_

BS1

498

362

761

 $110~\simeq$  not detected at detection limit of 1 ug/g, unless otherwise specified. igh concentrations. ug/kg unless otherwise specified. = henzo(b)fluoranthene and benzo(k)fluoranthone co-elute. SSAN = scan number or retention time on chromatogram. enio(a)anthracene and chryseneco-elute i All results reported in\_\_\_

	05/14/85
PAGE 37	RECEIVED:

Analytical Serv REPORT Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE ID 850033 Soil

FRACTION 05A TEST CODE SW827B Date & Time Collected 05/12/86

NAME GCMS B/N Semivol-SW846 Category

 $3\ =\$ anthracene and phenanthrene co-elutetogether in high concentrations. = detected in reagent blank; background subtraction not performed

J = estimated value; less than method detection limit.

indicates dilution of sample if greater than one (1).

linits should be multiplied by conc. factor.

Minimum detection

LAB # 86-05-078	NAME Pesticides & PCBs by GC/MS Category	VERIFIED BY LAK COMPOUNDS DETECTED O	COMPOUND	alpha BHC ND	beta BHC ND	gamma BHC ND	delta BHC ND	PCB-1242 ND	PCB-1254 ND	PCB-1221 ND	PCB-1232 ND	PCB-1248 ND	PCB-1260 ND	PCB-1016 ND	toxaphene ND	
REPORT Sample	TEST CODE MS 608 lected 05/12/86	ANAL YST	NPDES SCAN EPA	2P 102P	3P 103P	4P 104P	5P 105P	18Р 106Р	19P 107P	20P 108P	21P 109P	22P 110P	23P 111P	24P 112P	25P 113P	
Analytical Serv Results by S	FRACTION OGA TEST CODE MS 6 Date & Time Collected 05/12/86	DATE EXTRACTED <u>05/15/86</u> DATE INJECTED <u>05/21/86</u>	COMPOUND RESULT NA	aldrin ND	dieldrin ND	chlordane ND	4, 4'-DDT ND	4, 4'-DDE ND	4, 4'-DDD ND	alpha endosulfan <u>ND</u>	beta endosulfan <u>ND</u>	endosulfan sulfate NO	endrin <u>ND</u>	endrin aldehyde ND	heptachlor ND	heptachlor epoxide <u>ND</u> i
-1.2 38 -1.EIVED 05/14/86	SAMPLE ID 860034 Soil	DATA FILE <u>SCUOSO78COA</u> CONC FACTOR	NPDES SCAN EPA C	1P 83P	10P 90P	416 93	d26 d4 <b>1</b>	des da <b>66</b>	9.4.P	11P 95P	12P 96P	14P 97P e	14P 98P	15P 99P	16P 100P	17P 101P h

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REPORT Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

SAMPLE ID 850034 Soil

FRACTION OGA TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected 05/12/86

AND DEFINITIONS FOR THIS REPORT. NOTES

SCAN = scan number on chromatogram.

NO = not detected at EPA detection limit method 625, (Federal Register, 12/3/79). All results reported in micrograms/liter unless otherwise specified.

LAB # 86-05-078	TEST CODE SW827A NAME GCMS Acid Semivol-SW846 ected 05/12/86
Analytical Serv REPORT Results by Sample	FRACTION OGA TEST CODE SW827A Date & Time Collected 05/12/86
PAGE 40 RECEIVED: 05/14/86	SAMPLE ID 860034 Soil

BY LAK ED O	RESULT	Q	S	Q	N	QN		
VERIFIED BY COMPOUNDS DETECTED	сомРаима	4-nitrophenol	2,4-dinitrophenol	2-methyl-4,6-dinitrophenol	pentachlorophenol	phenol		
MJL 5100				2-methyl				
ANAL YST TRUMENT	EPA	58A	59A	<b>60A</b>	64A	65A		
ANAL YST I NSTRUMENT	NPDES SCAN	7A	5A	4A	9A	10A		
05/15/8 <u>6</u> 05/21/8 <u>6</u>	RESULT	Q	Q	Q Z	Q	QN	QN	
DATE EXTRACTED <u>05/15/86</u> DATE INJECTED <u>05/21/86</u>	СОМРОИНО	2, 4, 6-trichlorophenol	4-chloro-3-methylphenol	2-chlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2-nitrophenol	
DATA FILE <u>SCUOSO78CO6</u> C. FACTOR 41		2, 4	4-ch]					IES
R 5000	EPA	21A	23 <b>A</b>	244	314	348	57A	SURROGATE RECOVERIES
TA FILE FACTOR	SCAN							SATE R
DAT	RPDES	114	Ø	1 1 A	4.0	AE O	<b>4</b>	SURROC
				7	16	10		

d5-phenol\_

RESULT

COMPOUND

SCAN CODE

25

2-fluorophenol\_

482

281

**4**S1

331

₽83

ca1

484

28

2, 4, 6-tribromophenol

d3-phenol

RECEIVED: 05/14/86

REPORT Analytical Serv

LAB # 86-05-078 Continued From Above

SAMPLE ID 860034 Soil

Results by Sample

Category

NAME GCMS Acid Semivol-SW846 FRACTION OGA TEST CODE SW827A Date & Time Collected 05/12/86

AND DEFINITIONS FOR THIS REPORT. ROTES

SCAN = scan number or retention time on chromatogram.

All results reported in  $\log/kg$  unless otherwise specified. ND  $^\circ$  not detected at detection limit of 1 ug/g, unless otherwise specified.

 $\mathsf{BL} = \mathsf{detected}$  in reagent blank; background subtraction not performed.

Minimum detection indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. CCNC. FACTOR:

factor. linits should be multiplied by conc.

LAB # 86-05-078	NAME GCMS B/N Semivol-SW846 Category	WJL VERIFIED BY LAK 5100 COMPOUNDS DETECTED 0	COMPOUND	N-nitrosodimethylamine ND	N-nitrosodiphenylamine ND	N-nitrosodi-n-propylamine ND	bis(2-ethylhexyl)phthalate ND	butyl benzyl phthalate ND	di-butyl phthalate ND	di-n-octyl phthalate ND	diethyl phthalate ND	dimethyl phthalate ND	benzo(a)anthracene A ND	benzo(a)pyrene NO	benzo(b)fluoranthene * ND	benzo(k)fluoranthene * ND	chrysene A ND	acenaphthylene ND	anthracene R ND
REPORT Sample	FRACTION O6A TEST CODE SW827B Date & Time Collected 05/12/86	ANALYST INSTRUMENT	NPDES SCAN EPA	41B 61B	43B 62B	42B 63B N	13B 66B bi	15B 67B	268 688	298 698	24B 70B	25B 71B	5B 72B	4B 73B	75 748	9B 75B	18B 76B	2B 77B	38 788
Analytical Serv Results by Sa	FRACTION 06A Date & Time Coll	HATE EXTRACTED <u>05/15/86</u> DATE INJECTED <u>05/21/86</u>	RESULT	acenaphthene ND :	benzidine ND	N	hexachlorobenzene ND	hexachloroethane ND	er ND	2-chloronaphthalene ND	1,2-dichlorobenzene <u>ND</u> ;	1,3-dichlorobenzene ND ;	1,4-dichlorobenzene ND	robenzidine ND	2,4-dinitrotoluene ND	2,6-dinitrotoluene ND	ON NO	fluoranthene ND	phenyl ether ND :
	034 Soil	<u>5CU05078CO6</u> DATE <u>41</u> DATE	ЕРА СОМРОUND	1B a	58	8B 1,2,4-trichlorobenze	9B hexach	12B hexac	18B bis(2-chloroethyl)eth	20B 2-chloro	25B 1,2-dich	26B 1,3-dich	273 1,4-dich	28B 3,3'dichlorobenzid	35B 2, 4-din	35B 2,6-din	37B 1,2-diphenylhydrazi	39B f	40B 4-chlorophenyl p
PAGE 42 RECEIVED: 05/14/86	SAMPLE 1D <u>860034 Soil</u>	DATA FILE SOURCE FACTOR	NPDES SCAN EF	1.8	48	468	338	363 15	17	168	208 25	218 26	228 27	238 26	358 35	288	398 37	318 35	178 40

PA( RE(	PAGE 43 RECEIVED:	05/14/86	98	Analytical Serv Result	ħq s	Serv REPORT Results by Sample		LAB # 86-05-078 Continued From Above
SA	FLE II	SAMPLE ID 860034 Soil	Soil	FRACTION OGA Date & Time	6A e Col	RACTION OGA TEST CODE SW827B Date & Time Collected 05/12/86	SW827B 12/86	NAME GCMS B/N Semivol-SW846 Category
-	14B	418	4-bromophenyl phenyl	ether		88	798	benzo(ghi)perylene ND
, <del></del>	12B	428	bis 2-chloroisopropyl)e	opropyl)ether	Q	328	808	fluorene
••	10B	43B	bis(2-chloroethoxy)me	thoxy)methane	Q 2	448	818	phenanthrene B ND
. ,	34B	52B	hexach	hexachlorobutadiene		198	82B	dibenzo(a,h)anthracene ND
•	35B	538	hexachlorocyclopentad	clopentadiene		376	838	indeno(1,2,3-cd)pyrene ND
7	388	548		isophorone	· 임	45B	848	pyrene ND
17	39B	55B		naphthalene	Q			
	40B	558		nitrobenzene	QN QN			
i	1		(   					

## SURROGATE RECOVERIES

COMPOUND	d5-nitrobenzene 57	2-fluorobiphenyl 88	d14-terphenyl51	d10-biphenyl
SCAN CODE	851	BS2		BS4
SCAN	497	760	1337	

ROTES AND DEFINITIONS FOR THIS REPORT.

the mot detected at detection limit of 1 ug/g, unless otherwise specified. igh concentrations. All results reported in <u>ug/kg</u> unless otherwise specified. + = henzo(b)fluoranthene and benzo(k)fluoranthene co-elute. SCAN = scan number or retention time on chromatogram. enzo(a)anthracene and chryseneco-elute i

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Analytical Serv

REPORT

LAB # 86-05-078 Continued From Above

Results by Sample

SAMPLE 1D 860034 Soil

FRACTION 06A TEST CODE SW827B Date & Time Collected 05/12/86

NAME GCMS B/N Semivol-SW846 Category

Minimum detection  $3\ =\$ anthracene and phenanthrene co-elutetogether in high concentrations = detected in reagent blank; background subtraction not performed indicates dilution of sample if greater than one (1). J = estimated value, less than method detection limit. linits should be multiplied by conc. factor. CCNC FACTOR

Analytical Serv

LAB # 86-05-078

RECEIVED: 05/14/86

SAMPLE ID 860032 Matrix Spike BNA

REPORT Results by Sample FRACTION O7A TEST CODE SW827A NAME GCMS Acid Semivol-SW846 Date & Time Collected not specified

Category

DATA FILE SCHOSO78CO7 FACTOR 0100

DATE EXTRACTED 05/15/86 DATE INJECTED 05/21/86

5100 INSTRUMENT ANALYST

M

COMPOUNDS DETECTED VERIFIED BY

> 2, 4, 6-trichlorophenol EPA 21A NPDES SCAN 747 11A

RESULT COMPOUND

NPDES SCAN

EPA

**58A** 

884

**7**A

114

871

**2**A

107

4-chloro-3-methylphenol

22A

683

a A

244

397

<u>1</u>

7

**59A** 

115

4-nitrophenol

RESULT

COMPOUND

28

2, 4-dinitrophenol

85

2-methyl-4,6-dinitrophenol

**60A** 957

4 4

88

2-chlorophenol

1066

9A

92

2,4-dichlorophenol

31A

577

34.4

552

pentachlorophenol

64A **65A** 

382

10A

93

2,4-dimethylphenol

2-nitrophenol

phenol

76

137

SURROGATE RECOVERIES

574

5:14

**Q** 

SCAN CODE

451

331

482

279

COMPOUND

RESULT

d5-phenol

2-fluorophenol

2, 4, 6-tribromophenol

453

591

400,4

d3-phenol

RECEIVED: 05/14/86

REPORT Analytical Serv Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE ID 860032 Matrix Spike BNA

FRACTION O7A TEST CODE SW827A NAME GCMS Acid Semivol-SW846 Date & Time Collected not specified

Category

AND DEFINITIONS FOR THIS REPORT. COTES SCAN = scan number or retention time on chromatogram.

unless otherwise specified. All results reported in% Recov.

otherwise specified BL = detected in reagent blank; background subtraction not performed. 130 = not detected at detection limit of 1 ug/g, unless

Minimum detection indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. CCNC. FACTOR:

linits should be multiplied by conc. factor.

LAB # 86-05-078	SW827B NAME GCMS B/N Semivol-SW846 specified Category	JL VERIFIED BY LAK 5100 COMPOUNDS DETECTED 46	COMPOUND	N-nitrosodimethylamine 32	N-n: trosodiphenylamine 140	N~nitrosodi-n-propylamine 104	bis(2-ethylhexyl)phthalate 150	butyl benzyl phthalate 46	di-butyl phthalate 126	di-n-octyl phthalate 162	diethyl phthalate 116	dimethyl phthalate 121	benzo(a)anthracene A 127	benzo(a)pyrene 146	benzo(b)fluoranthene * 162	benzo(k)fluoranthene * 121	chrysene A 133	acenaphthylene 108	anthracene p 14
	1	ANALYST TRUMENT	EPA	61B	62B	<b>63B</b>	66B	67B	889	869	70B	718	72B	73B	74B	75B	768	778	788
REPORT Sample	Collected not	ANALYST INSTRUMENT	NPDES SCAN	41B 162	43B 963	42B 481	13B 151Z	15B 1421	268 1189	29B 1612	24B 937	258 828	5B 1496	6B 1717	78 1665	98 1669	18B 1503	2B 836	3B 1095
il Serv Results by	FRACTION O7A Date & Time Col	ACTED 05/15/86 ECTED 05/21/86	RESULT N	thene 116	idine 1	102 in 102 in 102 in 102 in 102 in 102 in 103 in 10	120 in 120	thane 489	ether 92	alene 114	zene 94	36 auazu	89 auazı	idine 223	luene 98	luene 128	azine NA	thene 142	ether <u>123</u> :
Analytica	SAMPLE ID 860032 Matrix Spike BNA	BCOZ DATE EXTRAC 1 DATE INJEC	COMPOUND	acenaphth	benzid	1, 2, 4-trichloroben	hexachlorobenz	hexachloroeth	bis(2-chloroethyl)et	2-chloronaphthal	1,2-dichlorobenz	1,3-dichlorobenz	1, 4-dichlorobenz	3,3'dichlorobenzi	2,4-dinitrotolu	2,6-dinitrotolu	1,2-diphenylhydraz	fluoranth	4-chlorophenyl phenyl e
PAGE 47 RECEIVED: 05/14/86	860032 Mat	_E <u>5CM05078C07</u> DR	ЕРА	1.B	5.8	83	98	12B	183	208	25B	263	275	288	358	36B	378	393	40B
47 IVED: (	LE 10	DATA FILE	S SCAN	8 855	5 1239	590	3 1039	499	B 392	3 772	3 447	3 417	3 423	1495	8 875	8 <u>E37</u>	æ	3 1274	3 944
PAGE 47 RECEIVE	SAMP	្សារជួ	RPDES	18	<b>य</b>	465	338	36B	፫ 7 1	.75	20B	218	<b>a</b> 8 8	38 €	278	388	£93	318	178

GL. GE	PAGE 48 RECEIVED:	<i>::</i>	05/14/86		Analytical Serv Resu	Serv Results by Sample	RE Samp 1	REPORT Nple		LAB # 86-05-078 Continued From	LAB # 86-05-078 Continued From Above
យ	AMPLE	8 QI :	9003	SAMPLE ID 860032 Matrix Spike BNA	FRACTIC Date &	N OZA Time Co]	TEST  lecte	CODE d not	FRACTION OZA TEST CODE SWB27B N Date & Time Collected not specified	AME GCMS	B/N Semivol-SWB Category
	14B	1018	413	4-bromophenyl phen	yl ether _	134	88	BB <u>2017</u>	798	benzo (gh i	benzo(ghi)perylene
	12B	464	428	bis(2-chloroisoprop	yl)ether _	86	32B	942	808		fluorene
	10B	556	43B	bis(2-chloraethoxy)m	)methane	63	44B	1088	818	phenar	phenanthrene B
	348	627	528	hexachlorobut	utadiene _	107	19B	1957	828	dibenzo(a,h)anthracene	nthracene
	358	736	538	hexachlorocyclopent	ntadiene _	118	37B	1950	838	indeno(1,2,3-cd)pyrene	cd)pyrene
7	388	532	543	qosi	ophorone	124	45B	1308	848		pyrene
17	39B	598	55B	napht	hthalene	90					
6	40B	499	54B	nitrob	on or no do	α α					

111

128

124

136

56B

499

40B

88

nitrobenzene

113

## SURROGATE RECOVERIES

	COMPOUND	d5-nitrobenzene86	2-fluorobiphenyl 103	d14-terphenyl 65	d10-bipheny1
משמשור שבמירוידב	SCAN CODE	497 BS1	75 <u>9</u> BS2	1336 BS3	BS.

# COTES AND DEFINITIONS FOR THIS REPORT

k0 = not detected at detection limit of 1 ug/g, unlass otherwise specified. igh concentrations. unless otherwise specified. \* = henzo(b)fluoranthene and benzo(k)fluoranth~ne co~elute. SCAN == scan number or retention time on chromatogram enzo(a)anthracene and chryseneco-elute i All results reported in Recov

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Analytical Serv

Serv REPORT Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE ID 860032 Matrix Spike BNA

FRACTION OZA TEST CODE SW827B

Category

Minimum detection

NAME GCMS B/N Semivol-SW846

3 ≈ anthracene and phenanthrene co~elutetogether in high concentrations. SL ≈ detected in reagent blank; background subtraction not performed. = detected in reagent blank; background subtraction not performed Date & Time Collected not specified

indicates dilution of sample if greater than one (1). J ≈ estimated value; less than method detection limit. CENC. FACTOR:

linits should be multiplied by conc. factor.

05/14/86 RECEIVED:

Analytical Serv

Serv REPORT RESULTS by Sample

LAB # 86-05-078

NAME Pesticides & PCBs by GC/MS TEST CODE MS 608 FRACTION OBA SAMPLE ID 860034 Duplicate Analysis

Date & Time Collected not specified

Category

밀 일 LAK Q Q S 밀 2 2 QN ND S QN QN Q N RESULT COMPOUNDS DETECTED VERIFIED BY PCB-1248 PCB-1260 PCB-1016 gamma BHC PCB-1242 PCB-1232 tcxaphene alpha BHC beta BHC delta BHC PCB-1254 PCB-1221 COMPOUND M EPA 102P 104P 111P 112P 113P ANALYST 103P 105P 106P 107P 108P 109P 110P NPDES SCAN 25 20P 22P 23P 24P 25P 21P 9 **18**P 19P **4**P 55 05/15/86 DATE INJECTED 05/21/86 S S S 2 2 S N Ž 2 2 2 2 S 욷 RESULT DATE EXTRACTED beta endosulfan endrin aldehyda heptachlor epoxide aldrin dieldrin chlordane 4, 4'-DDE 4, 4'-DDD alpha endosulfan endosulfan sulfate endrin 4, 4'-DDT heptachlor COMPOUND 5CD05078C08 EPA **69**P 91P d76 97P 9. 9. 9. 9. 265 1005 101P 606 92P 939 94P 95P DATA FILE CONC. FACTOR NPDES SCAN 4+1 16.P 1 :: p 14P 156 17P 10 10P 1 1 P 9 7P 9 178

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Serv REPORT Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

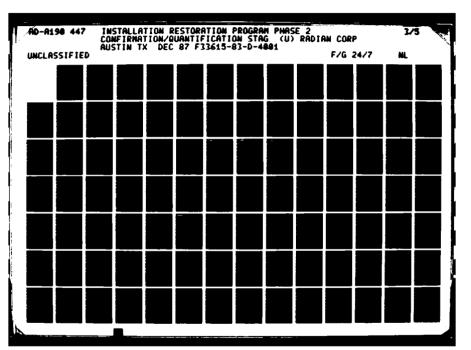
FRACTION OBA TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected not specified Category SAMPLE ID 860034 Duplicate Analysis

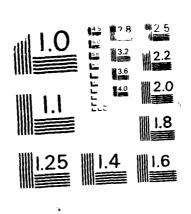
AND DEFINITIONS FOR THIS REPORT. RUTES

SCAN = scan number on chromatogram.

All results reported in micrograms/liter unless otherwise specified.

 $140~\pm$  not detected at EPA detection limit method 625, (Federal Register, 12/3/79).





MICROCOPY RESOLUTION TEST CHART

SOCIOSIAL INCOCONELINAS DE CONTRA DE

Analytical Serv

REPORT Results by Sample

LAB # 86-05-078

RECEIVED: 05/14/86

SAMPLE ID 860034 Duplicate Analysis

FRACTION OBA TEST CODE SWB27A NAME GCMS Acid Semivol-SWB46 Date & Time Collected not specified

Category

DATE EXTRACTED 05/15/86
DATE INJECTED 05/21/86 DATA FILE SCDOSO78COB

INSTRUMENT 5100 ANALYST

N N

VERIFIED BY LAK COMPOUNDS DETECTED

> 21A 22A EPA 24A 31A MPDES SCAN 11A 14 24 8 180

RESULT 밁 2, 4, 6-trichlorophenol COMPOUND

밁 S 4-chloro-3-methylphenol 2-chlorophenol

2

2, 4-dinitrophenol

皇

4-nitrophenol

SBA

74

RESULT

COMPOUND

NPDES SCAN

윋

2-methyl-4,6-dinitrophenol

**60A** 

44

**64A** 

9 8

**59A** 

5 P

윋

pentachlorophenol

밁

phenol

2 S 2,4-dichlorophenol 2,4-dimethylphenol

10A

2

2-nitrophenol

**65A** 

SURROGATE RECOVERIES

344

3A

574

**6A** 

COMPOUND SCAN CODE

AS1

330

482

279

483

581

40.4

65

d5-phenol

Φ

RESULT

2-fluorophenol

2, 4, 6-tribromophenol

d3-phenol

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Analytical Serv REPORT Results by Sample

LAB # 86-05-078 Continued From Above

FRACTION OBA TEST CODE SW827A NAME GCMS Acid Semivol-SW846 Date & Time Collected not specified Category SAMPLE ID 860034 Duplicate Analysis

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in - ug/kg unless otherwise specified. NU = not detected at detection limit of 1 ug/g, unless otherwise specified.

BL = detected in reagent blank; background subtraction not performed.

J = estimated value; less than method detection limit.

Minimum detection CCMC. FACTOR: indicates dilution of sample if greater than one (1). factor. linits should be multiplied by conc.

SECOND THE SECOND STATES OF SECOND SE

LAB # 86-05-078	SW827B NAME GCMS B/N Semivol-SW846 specified Category	WJL VERIFIED BY LAK 5100 COMPOUNDS DETECTED 1	COMPOUND	N-nitrosodimethylamine ND	N-nitrosodiphenylamine ND	N-nitrosodi-n-propylamine ND	bis(2-ethylhexyl)phthalate 480	butyl benzyl phthalate ND	di-butyl phthalate ND	di-n-octyl phthalate ND	diethyl phthalate ND	dimethyl phthalate ND	benzo(a)anthracene A ND	benzo(a)pyrene <u>ND</u>	benzo(b)fluoranthene * ND	benzo(k)fluoranthene * ND	chrysene A <u>ND</u>	acenaphthylene <u>ND</u>	anthracene P NO
		ANALYST INSTRUMENT	EPA	618	62B	9E9	66B	<b>67B</b>	683	869	708	718	72B	738	74B	75B	76B	778	788
REPORT Sample	Collected not	INS	NPDES SCAN	418	43B	42B	13B 1516	158	268	298	24B	258	58	6B	7.8	98	183	28	38
Serv Results by	ACTION OBA	05/15/86 05/21/86	RESULT	QN	QN	Q	QN	QN	Q	Q	QN	Q	QN	QN	QN	QN	QN	QN	ND
=	FRACTI Date &	EXTRACTED : INJECTED		phthene	benzidine	benzene	benzene	oethane	1)ether	thalene	benzene	benzene	benzene	nzidine	toluene	toluene	drazine	anthene	l ether
Analytica	Analysis	DATE EX DATE I	COMPOUND	acenaphth	e q	1, 2, 4—trichlorobenz	hexachlorobenz	hexachloroeth	bis(2-chloroethyl)et	2-chloronaphthal	1,2-dichlorobenz	1,3-dichlorobenz	1, 4-dichlorobenz	3,3'dichlorobenzid	2,4-dinitrotolu	2,6-dinitrotolu	1,2-diphenylhydraz	fluoranth	lhul phenyl
	uplicate	55005078C08	J			1, 2, 4			bis(2-	<u>.</u>	1,	H	1,	, e, e	C	CI	1,2-		4-chlorophenyl
05/14/86	360034 D		EPA	13	5B	88	86	128	188	205	25B	263	27B	288	358	358	378	398	40B 4-0
PAGE 54 RECEIVED: (	SAMPLE ID 860034 Duplicate Analysis	DATA FILE CONC. FACTOR	RPDES SCAN	18	4B	46B	338	368	118	0 16B	€OB	218	22B	23B	27B	28B	298	318	17B
									r 1	82									

PAGE 55 RECEIVED:	05/14/86	Analytic 86	ical Serv Results by	REPORT y Sample		LAB # 86-05-078 Continued From Above
SAMPLE ID	860034	SAMPLE ID 860034 Duplicate Analysis	FRACTION OBA TEST CODE Date & Time Collected not	TEST CODE SW827B ollected not specif	SWB27B N specified	NAME GCMS B/N Semivol-SW846
148	413	4-bromophenyl phenyl	ether ND	88	798	benzo(ghi)perylene ND
128	42B	bis(2-chloroisopropyl)e	)ether ND	328	80B	fluorene ND
108	43B	bis(2-chloroethoxy)methane	ethane ND	. 44B	818	phenanthrene B ND
348	528	hexachlorobutad	adiene ND	198	82B	dibenzo(a,h)anthracene ND
358	53B	hexachlorocyclopentad	adiene ND	378	838	indeno(1,2,3-cd)pyrene ND
388	54B	isop	isophorone <u>ND</u>	458	848	pyrene ND
398	558	naphtha	halene ND			
40B	56B	nitroben	enzene ND			

## SURROGATE RECOVERIES

183

COMPOUND	d5-nitrobenzene 64	2-fluorobiphenyl97	d14-terphenyl57	d10-biphenyl
SCAN CODE	496 BS1	759 BS2	1336 BS3	B84

# NOTES AND DEFINITIONS FOR THIS REPORT.

 $\mathfrak{t}(\mathfrak{t}) = \mathsf{not}$  detected at detection limit of 1 ug/g, unless otherwise specified. igh concentrations. uq/kq unless otherwise specified. \* = henzo(b)fluoranthene and benzo(k)fluoranthane co-elute. SCAN = scan number or retention time on chromatogram. enzo(a)anthracene and chryseneco-elute i All results reported in\_\_\_

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Analytical Serv REPORT Results by Sample

אברטא. 10 1 פ

LAB # 86-05-078 Continued From Above FRACTION OBA TEST CODE SW827B NAME GCMS B/N Semivol-SW846 SAMPLE ID 860034 Duplicate Analysis

Category

Date & Time Collected not specified

 $B = {\sf anthracene}$  and phenanthrene co-elutetogether in high concentrations.  $BL = {\sf detected}$  in reagent blank; background subtraction not performed. = detected in reagent blank; background subtraction not performed

indicates dilution of sample if greater than one (1). J = estimated value; less than method detection limit. linits should be multiplied by conc. factor CCNC. FACTOR:

Minimum detection

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Serv REPORT Results by Sample Analytical Serv

LAB # 86-05-078

SAMPLE ID Reagent Blank BNA

FRACTION 09A TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected not specified

Category

LAK VERIFIED BY COMPOUNDS DETECTED M **ANALYST** DATE EXTRACTED 05/15/86
DATE INJECTED 05/21/86 DATA FILE 5CBO5078C09

RESULT	alpha BHC ND	beta BHC ND	gamma BHC ND	delta BHC ND	PCB-1242 ND	PCB-1254 ND	PCB-1221 ND	PCB-1232 ND	PCB-1248 ND	PCB-1260 ND	PCB-1016 ND	toxaphene ND	
COMPOUND													
SCAN EPA	102P	103P	104P	105P	106P	107P	108P	109P	110P	111P	112P	113P	
NPDES	2P	윤 	4 <del>4</del> 4	S.	18P	19P	20P	21P	22P	23P	24P	; 25P	
RESULT	ON	ND	QN	QN	QN	QN	ON	ON	ON	QN	ON	ND	N
0	aldrin	dieldrin	chlordane	4, 4'-DDT	4, 4'-DDE	4, 4'-DDD	endosulfan	endosulfan	an sulfate	endrin	n aldehyde	heptachlor	or epoxide
COMPOUND							alpha	beta	endosulfan		endrın		heptachlor
N EPA	899	90P	91P	92P	93P	94P	95P	96P	97P	989	999	100P	101P
NPDES SCAN	H H	10P	<b>6</b> P	7P	68	46	11P	12P	1.4P	1 4P	15P	16P	17P
Ž			•	7 1	185	<u>,</u>							

CHARLES MANAGEMEN SERVERS

PAGE 58 RECEIVED: 05/14/86

Analytical Serv REPORT Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE ID Reagent Blank BNA

FRACTION 09A TEST CODE MS 608 NAME Pesticides & PCBs by GC/MS Date & Time Collected not specified Category

AND DEFINITIONS FOR THIS REPORT. NOTES

SCAN = scan number on chromatogram.

140 = not detected at EPA detection limit method 625, (Federal Register, 12/3/79) All results reported in micrograms/liter unless otherwise specified.

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Analytical Serv

Serv REPORT Results by Sample

LAB # 86-05-078

SAMPLE ID Reagent Blank BNA

FRACTION 09A TEST CODE SW827A NAME GCMS Acid Semivol-SW846 Date & Time Collected not specified Category

		C	
ANALYS	DAIL EXIRACIED 05/15/86	3CB030/BC07	•
ANALYST	DATE EXTRACTED 05/15/86	DAIA FILE SCROSO/BCOY	

M	5100
ANALYST	NSTRUMENT

LAK	0
ВΥ	ED
VERIFIED BY	COMPOUNDS DETECT

RESULT	QN	Q	N	QN	ND		
COMPOUND	4-nitrophenol	2,4-dinitrophenol	2-methyl-4,6-dinitrophenol	pentachlorophenol	phenol		
EPA	58A	59A	60A	64A	65A		
NPDES SCAN	7A	S.A.	4 4	9A	10A		
RESULT	Q	QN	Q	QN	QN	QN	
COMPOUND	2, 4, 6-trichlorophenol	4-chloro-3-methylphenol	2-chlorophenol	2, 4-dichlorophenol	2,4-dimethylphenol	2-nitrophenol	
ЕРА	214	22A 4-	24A	31A	346	574	COVERIES
WPDES SCAN	11A	84	14	2 <b>A</b>	ЭА	64	SURROGATE RECOVERIES
urver F	ومارس	<u> </u>	7 	18		<b>ን</b> ሌ-ድላታር	

	d3-phenol	484	
76	2, 4, 6-tribromophenol	<b>453</b>	591
8	2-fluorophenol	ASS	275
78	d5-phenol	451	330
RESUL	COMPOUND	CODE	SCAN CODE

RECEIVED: 05/14/86

REPORT Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

SAMPLE ID Reagent Blank BNA

FRACTION 09A TEST CODE SW827A NAME GCMS Acid Semivol-SW846 Date & Time Collected not specified Category

NOTES AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

All results reported in ug/kg unless otherwise specified. otherwise specified 100 = not detected at detection limit of 1 ug/g, unless

BL = detected in reagent blank; background subtraction not performed

J = estimated value; less than method detection limit.

Minimum detection indicates dilution of sample if greater than one (1). linits should be multiplied by conc. CONC. FACTOR:

LAB # 86-05-078	SW827B NAME GCMS B/N Semivol-SW846 specified Category	WJL VERIFIED BY LAK 5100 COMPOUNDS DETECTED O	COMPOUND RESULT	N-nitrosodimethylamine ND	N-nitrosodiphenylamine ND	N-nitrosodi-n-propylamine ND	bis(2-ethylhexyl)phthalate NO	butyl benzyl phthalate ND	di-butyl phthalate ND	di-n-octyl phthalate ND	diethyl phthalate ND	dimethyl phthalate ND	benzo(a)anthracene A <u>ND</u>	benzo(a)pyrene <u>ND</u>	benzo(b)fluoranthene * ND	benzo(k)fluoranthene * ND	chrysene A ND	acenaphthylene <u>ND</u>	anthracene P ND
		ANALYST INSTRUMENT	I EPA	618	62B	8E9	66B	67B	88 <del>9</del>	869	70B	718	728	738	74B	75B	76B	778	788
REPORT Sample	Collected not	ANSTE	NPDES SCAN	418	43B	428	138	15B	268	293	24B	258	5B	68	7.8	98	188	28	3.8
lts by	IN 09A Time Col	05/15/86 05/21/86	RESULT N	QN	Q	QN	ON	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN
Analytical Serv Resu	FRACTION 09A Date & Time C	DATE EXTRACTED O DATE INJECTED O		acenaphthene_	benzidine _	1, 2, 4-trichlorobenzene	hexachlorobenzene _	hexachloroethane _	bis(2-chloroethyl)ether _	2-chloronaphthalene _	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	3,3'dichlorobenzidine	2,4-dinitrotoluene	2,6-dinitrotoluene	1,2-diphenylhydrazine	fluoranthene	l phenyl ether
9	Blank BNA	5CB05078C09 33	самьопи			1, 2, 4-tri	hex	e L	bis(2-ch16	2-ch10	1,2-4;	1, 3-d;	1, 4-d	3, 3'dict	2, 4-(	2, 6-(	1,2-dip		4-chlorophenyl
05/14/8	Reagent		EPA	18	5.8	818	86	128	183	208	253	268	278	298	358	35B	378	<b>8</b> 68	40B 4
PAGE 61 RECEIVED: 05/14/86	SAMPLE ID Reagent Blank BNA	DATA FILE CDNC. FACTOR	HPDES SCAN	18	48	463	338	368	: : 1	8 <b>9</b>	208	21B	22 <b>8</b>	208	27B	268	398	318	178

CONTRACTOR REPORTED CORRECT MANAGEMENT STATEMENT REPORTED PROCESSOR PROPERTY OF THE PROCESSOR PROPERTY OF THE PROCESSOR PROCES

LAB # 86-05-078 Continued From Above	TEST CODE SW827B NAME GCMS B/N Semivol-SW846 ected not specified Category	benzo(ghi)perylene ND	fluorene N <u>D</u>	phenanthrene B NO	dibenzo(a,h)anthracene ND	indeno(1, 2, 3-cd)pyrene ND	pyrene ND			
	SW8271 speci	79B	808	818	82B	838	848			
Serv REPORT Results by Sample	FRACTION 09A TEST CODE SW827B NA Date & Time Collected not specified	<b>8</b> B	328	448	198	375	458			
v ults by	N 09A Time Co	QN	2	Q	S	Q.	QN	Q	2	
Analytical Serv Resu	FRACTIO Date &	l phenyl ether	sopropyl)ether	ethoxy)methane	hexachlorobutadiene	yclopentadiene	isopharone	naphthalene	nitrobenzene	
98	SAMPLE ID Reagent Blank BNA	4-bromophenyl	bis(2-chloroisopropyl)e	bis(2-chloroethoxy)met	hexac	hexachlorocyclopentadi				RIES
05/14/86	Reagen	418	428	438	52B	538	548	553	55B	RECOVERIES
PAGE 62 RECEIVED:	SAMPLE ID	148	12B	108	348	358	98E <b>7</b>	86E 19	**************************************	SURROGATE

# NOTES AND DEFINITIONS FOR THIS REPORT

8

d5-nitrobenzene\_

2-fluorobiphenyl

385

760

BS1

497

ESa

1337

BS4

d14-terphenyl

d10-biphenyl

RESULT

COMPOUND

SCAN CODE

 $\Omega = 0$  not detected at detection limit of 1 ug/g, unless otherwise specified. igh concentrations All results reported in <u>ug/kg</u> unless otherwise specified.  $\star$  = henzo(b)fluoranthene and benzo(k)fluoranthone co-elute. SCAN = scan number or retention time on chromatogram. enzo(a)anthracene and chryseneco-elute i.

PAGE 63 RECEIVED: 05/14/86

REPORT Results by Sample Analytical Serv

LAB # 86-05-078 Continued From Above

SAMPLE ID Reagent Blank BNA

FRACTION 09A TEST CODE SW827B NAME GCMS B/N Semivol-SW846 Date & Time Collected not specified Category

3 = anthracene and phenanthrene co-elutetogether in high concentrations. = detected in reagent blank; background subtraction not performed J = estimated value, less than method detection limit.

indicates dilution of sample if greater than one (1). factor. linits should be multiplied by conc. CCNC. FACTOR:

Minimum detection

CORPORATION

Results by Sample Analytical Serv

REPORT

LAB # 86-05-078

RECEIVED: 05/14/86

SAMPLE ID Method Spike BNA

FRACTION 10A TEST CODE SW827A NAME GCMS Acid Semivol-SW846 Date & Time Collected not specified Category

DATA FILE SCHO4128CO1

DATE EXTRACTED 04/22/86
DATE INJECTED 05/29/86

INSTRUMENT ANALYST

5100

VERIFIED BY COMPOUNDS DETECTED

LAK 11

84

4-nitrophenol

**58A** 

932

**7**A

**59A** 

RESULT

COMPOUND

EPA

NPDES SCAN

RESULT

3

2, 4-dinitrophenol

CONC. FACTOR

EPA 21A MPDES SCAN 797 11A

2, 4, 6-trichlorophenol COMPOUND

102

922 SA

93

4-chloro-3-methylphenol

22A

729

B,A

244

4.4.5

T.

314

624

24

4A 1009

96

2-chlorophenol

**60A** 

2-methyl-4,6-dinitrophenol

**65A** 10A 423

64A

1121

9A

106

2,4-dichlorophenol

33

2, 4-dimethylphenol

344

596

₫ ()

192

97

2-nitrophenal

pentachlorophenol

phenol

105

111

SURROGATE RECOVERIES

591

**6A** 

SCAN CODE

COMPOUND

d5-phenol

67

RESULT

452

316

451

422

**AS3** 

1035

484

2-fluorophenol

B S

87

2, 4, 6-tribromophenol

d3-phenol

PAGE 65 RECEIVED: 05/14/86

Results by Sample Analytical Serv

REPORT

LAB # 86-05-078 Continued From Above

SAMPLE ID Method Spike BNA

FRACTION 10A TEST CODE SW827A NAME GCMS Acid Semivol-SW846 Date & Time Collected not specified Category

AND DEFINITIONS FOR THIS REPORT.

SCAN = scan number or retention time on chromatogram.

unless otherwise specified.  $\mathbb{N} = \mathbb{N}$  not detected at detection limit of 1 ug/g, unless otherwise specified. All results reported in

 $\mathrm{BL} = \mathsf{detected}$  in reagent blank; background subtraction not performed. J = estimated value; less than method detection limit.

indicates dilution of sample if greater than one (1). linits should be multiplied by conc. factor.

Minimum detection

PAGE 66 RECEIVED: 05/14/86

Analytical Serv REPORT Results by Sample

LAB # 86-05-078

Semivol-SW846 Category NAME GCMS B/N specified TEST CODE SW827B Date & Time Collected not FRACTION 10A SAMPLE ID Method Spike BNA

78 <del>6</del>B 83 LAK 45 83 9 20 30 80 83 84 80 67 RESULT 87 91 81 COMPOUNDS DETECTED VERIFIED butyl benzyl phthalate di-butyl phthalate di-n-octyl phthalate diethyl phthalate dimethyl phthalate ∢ benzo(a)pyrene \* ∢ acenaphthylene N-nitrosodimethylamine N-nitrosodiphenylamine N-nitrosodi-n-propylamine bis(2-ethylhexyl)phthalate benzo(a)anthracene benzo(b)fluoranthene benzo(k)fluoranthene chrysene COMPOUND REM 5100 EPA 61B 62B **63B** 66B 67B **68**B 69B 70B 71B 72B 73B 74B 75B 76B 77B INSTRUMENT ANAL YST NPDES SCAN 1562 888 525 1578 1478 1242 1682 1750 1569 1015 1814 877 1755 191 987 43B 26B 29B **6**B 18B 41B 15B 25B **9B** 133 24B 78 423 **2B** 23 04/22/86 05/29/86 RESULT 90 69 90 110 103 115 110 100 85 93 89 91 82 ₫ Z ATE EXTRACTED DATE INJECTED 1, 2-diphenylhydrazine acenaphthene benzidine hexachloroethane 2-chloronaphthalene 1, 2-dichlorobenzene 1, 3-dichlorobenzene 1,4-dichlorobenzene 3, 3'dichlorobenzidine 2,4-dinitrotoluene 1, 2, 4-trichlorobenzene hexachlorobenzene bis(2-chloroethyl)ether 2,6-dinitrotoluene fluoranthene DATE COMPOUND 5CM05128C01 EPA 18B 20B 25B 273 288 35E 36B 37B 39B 16 128 26B **2B** 83 93 DATA FILE 435 836 1333 535 E23 493 462 468 1558 946 NPDES SCAN 1352 638 1095 917 318 43 33B 338 16B 20B 21B 27B **36B** 85E 13 46B 368 11B E SE CONC 194

120

<u>c</u>

anthracene

78B

1152

38

47

408 4-chlorophenyl phenyl ether

765

	PAGE 67 RECEIVED:	ä	05/14/86	98	Analytical Serv Resu	Serv REPI Results by Sample	REF Samp 10	REPORT np 1 e		LAB # 86-05-078 Continued From Above	
(LL)	SAMPLE		e thod	SAMPLE ID Method Spike BNA	FRACTION Date & T	10A ime Co	TEST llecte	CODE	RACTION 10A TEST CODE SWB27B Nate & Time Collected not specified	NAME GCMS B/N Semivol-SW846	
	148	14B 1071	418	4-bromophenyl	phenyl ether	79	88	2185	798	benzo(ghi)perylene 86	9
	128	508	42B	bis(2-chloroisopropyl)e	opropyl)ether	7.6	328	966	808	fluorene 84	4
	108	611	433	bis(2-chloroethoxy)met	thoxy)methane	81	44B	1145	818	phenanthrene B 98	ωl
	348	676	528	hexach]	hexachlorobutadiene	106	198	2109	828	dibenzo(a,h)anthracene 91	
	358		233	hexachlorocyclopentad	:lopentadiene	QN	378	2103	838	indeno(1,2,3-cd)pyrene 87	<u>N</u>
7	388	578	54B		isophorone	85	45B	1368	848	pyrene 72	CU
195	398	647	558		naphthalene	83					
5	40B	5/5	55B		nitrobenzene	86					

## SURROGATE RECOVERIES

COMPOUND RESULT	d5-nitrobenzene <u>104</u>	2-fluorobiphenyl 77	d14-terphenyl 48	d10-biphenyl
CODE	BS1	BS2	883	BS4
SCAN CODE	547	808	1395	

# RUTES AND DEFINITIONS FOR THIS REPORT.

 $100\,$  m not detected at detection limit of 1 ug/g, unless otherwise specified igh concentrations unless otherwise specified. \* = henzo(b)fluoranthene and benzo(k)fluoranthone co-elute SCAN = scan number or retention time on chromatogram. enzo(a)anthracene and chryseneco-elute i All results reported in Recov.

PAGE 68 RECEIVED: 05/14/86

Analytical Serv

REPORT Results by Sample

LAB # 86-05-078 Continued From Above

SAMPLE ID Method Spike BNA

FRACTION 10A TEST CODE SW827B NAME GCMS B/N Semivol-SW846 Date & Time Collected not specified Category

Minimum detection

3 =anthracene and phenanthrene co-elutetogether in high concentrations 5L = detected in reagent blank; background subtraction not performed

J = estimated value; less than method detection limit.

CCNC. FACTOR: indicates dilution of sample if greater than one (1). factor linits should be multiplied by conc.

J	1
1	C
J	-
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1	C

	RAS -	Austin REPORT	Work Order # 86-07-086
Received: 07/24/86		08/21/86 14:16:46	
PEPORT Radian TO BL4 Austin	PP	Anal pac 9948	h h
ATTEN LATES French		ATTEN ATTEN	
CLIENT PLANT4 S COMPANY Plant 4, USAF FACILITY GENERAL Dynamics	SAMPLES <u>5</u>	FHUNE 515-454-4/7/	CUNIACI CUNUVER
ב ז י	F	Footnotes and Comments	
- x 4 2	* 4	* Indicates a value less than 5 times Potential error for such low values r	than 5 times the detection limit. low values ranges between 50 and 100%.
F D. # <u>212-027-27-40</u> FRUDICE <u>under separate cover</u>		Indicates that spike recovery ecific matrix was not within interferent present.	for this analysis on the acceptable limits indicating
		Silver, ICPES and NAMES used	on this report
ंड अ <u>घ००43</u> ०५ <b>इ</b> ५० <u>०</u> 44 ०९ अ५००45	шшш	1-1 1 :	
	3020	st10n, st10n,	
<b>7</b> 1		racti	
.97			
	SE G W	Selenium, graphite AA	

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		4 4 7	TOUGO		700 20-70 #
86celved: 07/24/86		Results By Test	Test		WOLK UTUEL # 00-0/-000
EST CODE	Sample 01 (entered units)	Sample 02 (entered units)	Sample 03	Sample 04 (entered units)	Sample 05 (entered units)
		0.018			0.030@
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		1.5			0.62
<u> </u>		<.002			୍. ୦୦ଅ
Eur S		0.027			0.032
1 033020		98/60/80			98/60/80
		08/09/89			98/60/80
		98/90/80			98/90/80
HC IR	1300	0u	6/6n <b>9</b> >	4. 6/60	ΩΠ
88	1800	0.015	6/6n	6/6n	0.006
	07/29/86		07/29/86	07/29/86	
		ে 02			<.002
		:			

COCCET PROCESSES COCCESSES 
ACCORD REPORTED SECRETARIES REPORTED SECRETARIES RECERCIONAL REPORTED CONTRACTOR SECURITOR SECURITOR REPORTED

Received: 07/24/86

SAMPLE 1D 860045

Results by Sample - Austin RAS

FRACTION OSC TEST CUDE HG C Date & Time Collected 07/22/86

Work Order # 86-07-086 Continued From Above

NAME Mercury, cold vapor Category

DOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

\* = less than 5 times the detection limit ND = not detected at detection limit NA = not analyzed

N\A = not available

SACCO POSSESSO POSSESSO PICOCOCOCO PICACACACA PICOCOCOCOCO	STATES STATES SECTION STATES SECTION STATES
CORPORATION	

Work Order # 86-07-088	CERTIFIED BY  CONTACT CONQVER	Publicate of report of 09/03/86. Footnotes and Comments  * Indicates a value less than 5 times the detection limit. Potential error for such low values ranges between 50 and 100%.  © Indicates that spike recovery for this analysis on the specific matrix was not within acceptable limits indicating an interferent present.  TEST CODES and NAMES used on this report	
Austin REPORT 09/09/86 10:06:03	PREPARED <u>Radian Analutical Services</u> BY <u>8501 Mo-pac Bl.</u> PO Box 9948 Austin, TX 78751 ATTEN PHONE <u>512-454-4797</u>	Dublicate of report of 09/03/86. Footnotes and Comments  * Indicates a value less than 5 times the detecti Potential error for such low values ranges betwee  @ Indicates that spike recovery for this analysis specific matrix was not within acceptable limits an interferent present.  TEST CODES and NAMES USED on this report	Gross alp Gamma rad
Page 1 Received: 07/24/86	REPORT Radian  TO B1.4 Austin Austin ATTEN Larry French CLIENT PLANT4 COMPANY Plant 4, USAF FACILITY General Dynamics	WORK ID NARF and B1.21, radiochem TAKEN PAW TRANS Fed Ex TYPE P.O. # 212-027-27-42 INV. # 8548 SAMPLE IDENTIFICATION	01     860035       02     860036       03     860037       04     860038       05     860039       06     860040

Page 2
Received: 07/24/86
Results By Test Results By Test

Sample Id	SAMPLE	Test: ALPHA	Test: BETA pci/	Test: GAMMA PCi/	
	5	6.7 (6.6)	19.6(4.2)	(54.4	
860035	05	pci/g 11.3(6.8)	pci/g 15.2(4.2)	pci/ug (58.2	
960038	E	pci/g 7.1(6.5)	pci/g 15.8(4.2)	pci/ug (53.6	
860037	40	pci/g 12 4(6 9)	pci/g 19.5(4.2)	pci/ug (41,3	
860038	5.	9 2(5 9)	22 9(4 4)	pci/ug (59.7	
860039	2 2	pci/g	pC1/g	pCi/ug (54 5	
860040	3	pCi/9	PCi/9	pCi/g	

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CONTRACTOR PROPERTY

KISSISSAM PARALLES

RAS - Austin REPORT Work Order # 86-07-095 09/09/86 10:13:37	1 Services	ATTEN AUSTIN, IX /B/31 CE	SAMPLES 3 CONTACT CONDITION SAMPLES 3 CONTACT CONDITION SAMPLES 3 CONTACT CONDITION CONTACT CONT	Duplicate of report of 09/03/86. Footnotes and Comments	* Indicates a value less than 5 times the detect Potential error for such low values ranges betwe	@ Indicates that spike recovery for this analysis on the specific matrix was not within acceptable limits indicating
_	Radian Bl. 4 Austin	ATTEN Larry French	1 1	WORK ID NARF, radiochemistru Taken paw	PAW 212-027-27-42	8549
Page 1 Received:	REPORT TO	ATTEN	CLIENT COMPANY FACILITY	WORK ID TAKEN	SAP TPE #	* > N

TEST CODES and NAMES used on this report

ALPHA Gross alpha radiation BETA Gross beta radiation GAMMA Gamma radiation teeter souddon ethicus cossous

CORPORATION	Work Urder # 86-0/-075					
	REPURI Test	Test: GAMMA PCi/	(47.5	pCi/ug {46.9	pci/ug (42.5	pCi/ug
	Austin Results By Test	Test: <u>BETA</u>	16.1(4.2)	pci/g 18.3(4.2)	pci/g 10.0(3.9)	pCi/g
CORPORATION	אָר מ	Test: ALPHA	7, 1(6, 5)	pci/g 8.7(6.4)	pci/g 7.6(5.8)	pCi/g
c	rage < Received: 07/25/86	Sample Id	01	860046 : 02 !	860047 1	860048

TO SEE THE SEED OF THE PROPERTY OF THE SEED OF THE SEE

Page 1 Received:	RAS 08/13/86	- Austin REP 09/10/86 14:50:26	DRT	Work Order # 86-08-058
REPORT TO	Radian Bl. 4 Austin	PREPARED Radian BY 8501 Mo	Anal -pac 9948	
ATTEN	Larry French		1, 1, /6/31	CERTIFIED BY
CLIENT COMPANY FACILITY	PLANT4 SAMPLES Plant 4, USAF General Dunamics	PHUNE 316-43	01<-404-4/7/	CONTRACT
		Footnotes and C	Comments	
	90115 PAW PAW	* Indicates a version Potential error	alue less than 5 time for such low values	s the detection limit. ranges between 50 and 100%.
TYPE P.O. # INVOICE	212-027-27-40 under separate cover	@ Indicates tha specific matrix an interferent	@ Indicates that spike recovery for this a specific matrix was not within acceptable an interferent present.	nis analysis on the able limits indicating
	IDENTIFICATION		TEST CODES and NAMES used on	this report
01 860049 02 860051		E Silver, I G Arsenic,	CPES graphite AA	
		1 1		
05 860052 06 860054		11.7	.hod 3020	
		6010 Diges	hod 6010	
7	임	IR Hydro	carbons	
2	HG IG	Mercury, cold Iqnitability	vapor - solids	
05	NO	O IR Oil ar	1 .1	
		3		
	35	G Selenium, graphite	hite AA	

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Page 2 Received: 08/13/86

RAS - Austin Results By Test

Work Order # 86-08-058

Sample 05 (entered units)	0.004*	0.003*	0.16	₹. 002	0.005*	08/25/86	08/25/86	08/50/86	0U	0.064	<. 002
Sample 04 (entered units)	0.017	₹. 003	0.95	0.009*	0.017*	08/25/86	08/22/86	08/50/86	οu	0.35	€ 005
Sample 03 (entered units)									6/6n <b>9</b> }	170 9/9	08/21/86
Sample 02 (entered units)									6/6n <b>9</b> }	310	08/21/86
Sample 01 (entered units)									1700 9/6n	5/60	08/21/86
TEST CODE	AG E	AS G	BA E	CD_E	CR E	DG3020	date complete DG6010	date complete	HC IR mg/L	ONG IR	CE G complete

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Page 3 Received: 08/13/86

RAS - Austin Results By Test

Work Order # 86-08-058

AG E  9 / M	TEST CODE	Sample 06	
mplete : 0	AG_E	0.019	
BA E  Ug/m1  CD E  Ug/m1  CR E  Ug/m1  UG3020  UG4ate complete  IGATE  Ug/m1  UGNITS  Ug/m1  SE G	AS 6	€: 003	
CD E  Ug 7m1  CR E  Ug 7m1	BA E	0. 64	
CR E  Ug7m1  Ug3020  date complete  date complete  IGNITS  Ug7m1  SE G	co E	0.005*	
Ug/ml DG3020 date complete DG6010 date complete IGNITS Ug/ml	CR_E	0.024*	
date complete 106010 date complete date complete IGNITS yes/no 98 6	DG3020	08/25/86	
date complete EP_EXT date complete IGNITS yes/no vg/m1	date complete DG6010	08/25/86	
IGNITS  yes/no PB G  yes/m1 SE G	date complete	98/50/88	
yes/no PB G cg/ml	I GNITS	פע	
•	Jues/no	0.008	
	E 0 日 : :	<. 02@	

TOTAL KEESSES, MAKAAA DOODOO KAABAA WAADADA MAKAA WAADADA GAARAA GAABAA GAABAA GAABAA GAABAA GAABAA GAABAA GAABA

CORPORATION

- Austin RAS

tin Results by Sample

Work Order # 86-08-058

Page 4 Received: 08/13/86

NAME Mercury, cold vapor Category

SAMPLE 1D 860050

FRACTION 04C TEST CODE HG C Date & Time Collected 08/11/86

VERIFIED

**ANALYST** 

DES

UNITS

403 INSTRMT

ANALYZED 08/25/86

DET LIMIT

RESULT

ANALYTE

0.0013 Mercury

0.00020

NOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at detection limit NA = not analyzedDET LIMIT = DETECTION LIMIT

\* = less than 5 times the detection limit N\A = not available

208

NAME Mercury, cold vapor Category

SAMPLE 1D 860052

FRACTION 05C TEST CODE HG C Date & Time Collected 08/11/86

VERIFIED

INSTRMT ANALYST

ANALYZED 08/25/86

UNITS

DES 403

RESULT ANALYTE

DET LIMIT

\*9000 0 Mercury

0.00020

MANNE CONTRACTOR SOUNDS AND MANNEY BOOK SOUNDS AND MANNEY BOOK BOOK BY TON

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STATEMENT OF STATEMENT STATEMENTS

Work Order # 86-08-058 Continued From Above NAME Mercury, cold vapor Category NAME Mercury, cold vapor Category FRACTION OGC TEST CODE HG C Date & Time Collected 08/11/86 FRACTION 05C TEST CODE HG C Date & Time Collected 08/11/86 REPORT Results by Sample \* = less than 5 times the detection limit - Austin ND = not detected at detection limit NOTES AND DEFINITIONS FOR THIS REPORT. RAS DET LIMIT = DETECTION LIMIT N\A = not available Received: 08/13/86 **SAMPLE ID 860052 SAMPLE 1D 860054** Page 5

VERIFIED GCL

UNITS

ANALYST DES INSTRMT 403

ANALYZED 08/25/86

DET LIMIT

RESULT

ANALYTE

0.00020

0.0003\*

Mercury

209

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT ND = not detected at detection limit

NA = not analyzed

\* = less than 5 times the detection limit

N\A = not available

CONTRACTOR OF THE PROPERTY OF

CARRY MARKETON CONTRACTOR CONTRACTOR

Wark Order # 86-09-040	Services	CONTACT CONDVER		* Indicates a value less than 5 times the detection limit. Potential error for such low values ranges between 50 and 100%.	@ Indicates that spike recovery for this analysis on the specific matrix was not within acceptable limits indicating an interferent present.	TEST CODES and NAMES used on this report
Austin REPORT 09/10/86 14:56:03	PREPARED <u>Radian Analytical Services</u> BY <u>8501 Mo-pac Bl.</u> PO Box 9948 AUStin, TX 78751	PHONE 512-454-4797	Footnotes and Comments	* Indicates a value less t Potential error for such l	@ Indicates that spike rec specific matrix was not wi an interferent present.	Iqnitabil
RAS -	Tench	PLANT4 SAMPLES 2 Plant 4, USAF General Dunamics	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		212-027-27-42 under separate cover	FICATION
Page 1 Received: 09/09/86	REPORT Radian TO B1.4 Austin ATTEN Larry French	CLIENT PLANT4 COMPANY Plant 4, FACILITY General	WORK ID ionitabilitu	TAKEN TKW TRANS TKW		SAMPLE IDENTIFICATION

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Page 2 Received: 09/09/86	RAS 86	- Austin REPORT Results By Test	Work Order # 86-09-040
TEST CODE	Sample 01	Sample <u>02</u> (entered units)	
: JGNITS	0u ;	no	



#### MEMORANDUM

08 September 1986

RC No. 212-027-27-02

TO:

Debra Richmann

FROM:

Neal Amick Manl

SUBJECT: Analysis of Soil and Water Samples for Methyl Ethyl Ketone - Air

Force Plant #4

Soil and water samples were analyzed for MEK by EPA SW-846 Method 8015. A list of the samples and the results are presented in Table 1. Water samples were analyzed by direct injection into a gas chromatograph equipped with a flame ionization detector. The soil sample was analyzed by extracting with carbon disulfide and injecting an aliquot of the extract into the gas chromatograph.

For each day of analysis, a three-point calibration curve was determined by carefully preparing standard solutions of known concentrations. A quality control sample was independently prepared and analyzed to ensure accurate quantitation. The quality control sample was analyzed to be within 10% of the expected results for each day of analysis.

The extraction efficiency for the soil analysis was checked by spiking an aliquot of the soil with MEK and analyzing. A recovery of 89% was obtained. No sample had MEK concentrations above the minimum detection level, which was 1.0 ug/mL for the water samples and 1.0 ug/g for the soil samples.

The instrument parameters were set as follows:

Instrument:

Tracor 560 with FID

Column:

1% SP1000 on Carbopack B, 6' x 2 mm I.D.

Carrier Flow:

N<sub>2</sub> at 20 cc/minute

Oven Temperature:

80°C programmed to 150°C at 10°C/minute



TABLE 1. ANALYTICAL RESULTS FOR METHYL ETHYL KETONE - AIR FORCE PLANT #4

#### A. Water Samples

Sample I.D.		Results (ug/mL
860129A	HM - 74	<1.0
860129B	HM - 74	<1.0
860168A	HM - 72	<1.0
860168B	HM - 72	<1.0
860173A	HM - 75	<1.0
860173B	HM - 75	<1.0
860199A	HM - 73	<1.0
860199B	HM - 73	<1.0

#### B. Soil Samples

Sample 1.D.		Results (ug/g)
860019	HM - 106A	<1.0
860021A	HM - 106C	<1.0
860021B	HM - 106C	<1.0

## RADIAN

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# RADIAN

# APPENDIX A-4 Soil Quality Assurance/Quality Control Data

This volume contains all QA/QC reports for soil analyses (organized by work order number). Also included are summary tables (Tables A.4-1 through A.4-8) of the QC reports.

## RADIAN

DOPESCO - PERIODE STREET STREET, STREE

TRACOSOO TRACASTAS TRACAS

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TABLE A.4-1

KARRI BARRARA BARRARA KARRARA KARRARA MARRARARA BARRARARA BARRARARA BARRARARA BARRARARA BARRARARA BARRARARA BAR

EPA HETHOD 8010: SURROGATE SPIKE RECOVERY RESULTS FOR SOIL SAMPLES

LAB ID	oc o	DATE	BROMOCHLOROMETHANE  R Recovery	2-BROMO-1-CHLOROFROPANE Z Recovery
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
8603176-01A		32786	76	103
8601205-04B	D1	12886	108	66
8601205-04B	D2	12836	120	111
8601205-05B		12886	109	96
8601205-06B		13086	124	103
8601205-07B		12986	109	114
8601205-08B		12986	115	117
8601205-11B		12986	111	114
8601205-12B		12986	105	119
8601205-13B		12986	109	139
8605072-01		51486	66	
8605072-01		52486	101	
8605072-02A		51486	110	
8605072-02A		52486	93	
8605072-03		51486	104	
8605072-04		51486	92	
8605072-05		51486	92	
8605072-06A		51586	114	
Standard Deviation (n-1)	tion (n-	7	6.6	12.5
Mean			111	112
Coefficient of Variation	Variation	uo	8.4	11.2

TABLE A.4-2

EPA METHOD 8020: SURROCATE SPIKE RECOVERY RESULTS FOR SOIL SAMPLES

# Recovery  101 103 100 101 94 98 103 103 100 100 100 100 100 100 100 100	32786 13086 13086 13086 13086 13186 13186 13186 13186 13186 52486 52486 52486 52486 52486	10 20	8603176-018 8601205-048 8601205-048 8601205-058 8601205-058 8601205-078 8601205-118 8601205-118 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8601205-138 8605072-01
5.5		n (n-1)	Standard Deviation (n-1)
		/* m	, , , , , , , , , , , , , , , , , , ,
5			
101			
-			
101			
. 4		;	
7.7		(n-1)	ILG DEVISEIS
٠,٠		in (n-1)	rd Deviserio
	72400		<b>5</b> 00-3
66	52486		¥90-0
5	20420		50-3
87	52486		-05
>>	727		
100	52486		-04
•	75470		,
102	52486		-03
10	3		50
92	51486		-0.7A
		•	;
102	52486	D2	-01
	770	;	10
100	514R6	10	-01
110	13186		-15B
	20151		
103	13186		-14R
110	13186		-138
	00161		_17D
30.	70161		
103	13186		-118
	20051		900
103	13086		-088
86	13086		-07B
76	13086		-06B
101	12000		-0.7 <b>p</b>
101	13086		450-
100	13086		-05B
103	13086		-04B
	)		1
101	32786		-01B
A Recovery	1	1	1 1 1 1
		<b>3</b>	
a, a, a-TRIFLUOROTOLUENE	DATE	ر	۷.

D = Duplicate analysis

TABLE A.4-3

EPA METHOD 8270 : MATRIX SPIKE RECOVERY RESULTS FOR SOIL SAMPLES

Date Extracted Date Injected	4/22/86 5/29/86	5/15/86 5/21/86	STANDARD DEVIATION	MEAN	COEFFICIENT OF
Parameter	% Recovery	Z Recovery	SD (n-1)	% Recovery	CV - Z
ACID FRACTION					
2,4,6-Trichlorophenol	102	114	8.5	108	7.9
4-Chloro-3-methylphenol	93	107	6.6	100	6.6
2-Chlorophenol	3 8	8	2.7	92	1.9
2 A-Dichlorophenol	901	86	. 0	. 6	
	907	7.6	6.67	66	0.01
7.4-Dimernyiphenoi	25. -	93	47.4	<u>.</u>	6,7
2-Nitrophenol	87	89	13.4	9/	17.3
4-Nit rophenol	94	115	21.9	100	22.0
2.4-Dinitrophenol	33	28	3.5	31	11.6
2-Methyl-4.6-dinitrophenol	1111	85	18.4	86	18.8
Pentachlorophenol	105	137	22.6	121	18.7
Phenol	76	76	0.0	9/	0.0
BASE FRACTION					
Acenaphthene	06	116	18.4	103	17.8
Benzidine	89	_	47.4	35	137.3
1,2,4-Trichlorobenzene	100	102	1.4	101	1.4
Hexachlorobenzene	85	120	24.7	103	24.1
Hexachloroethane	93	684	280.0	291	96.2
Bis (2-chloroethyl)ether	11	92	10.6	85	12.6
2-Chloronaphthalene	89	114	17.7	102	17.4
1,2-Dichlorobenzene	06	46	2.8	92	3.1
1,3-Dichlorobenzene	91	96	3.5	76	3.8
1,4-Dichlorobenzene	82	68	6.4	98	5.8
3,3-Dichlorobenzidine	110	223	79.9	167	48.0
2,4-Dinitrotoluene	103	86	3.5	101	3.5
2,6-Dinitrotoluene	115	128	9.5	122	7.6
Fluoranthene	110	142	22.6	126	18.0
4-Chlorophenyl phenyl ether	46	123	18.4	110	16.7
N-Nitrosodimethylamine	83	32	36.1	58	62.7
N-Nitrosodiphenylamine	91	140	34.6	116	30.0
N-Nitrosodi-n-propylamine	81	104	16.3	93	17.6
Bis (2-ethylhexyl)phthalate	09	150	63.6	105	9.09
Butyl benzyl phthalate	70	947	18.4	33	55.7
Di-butyl phthalate	78	126	33.9	102	33,3
Di-n-octvl phthalate	67	162	67.2	115	58.7
	,		,		

(Continued)

TABLE A.4-3 (Continued)

Sample I.D. Date Extracted Date Injected	8605078-10 <b>A</b> 4/22/86 5/29/86	8602078-07 <b>A</b> 5/15/86 5/21/86	STANDARD DEVIATION	MEAN	COEFFI CI ENT OF
Parameter	I Recovery	I Recovery	SD (n-1)	Z Recovery	VARIATION CV - X
Dimethyl phthalate	OF.	121	6.43	76	85.2
Benzo(a) anthracene	90	127	27.6	108	25.7
Benzo (a) pyrene	8	146	7.94	113	41.3
Benzo(b)fluoranthene	83	162	55.9	123	45.6
Benzo (k ) fluoranthene	<b>9</b>	121	26.2	103	25.5
Chrysene	80	138	41.0	109	37.6
Acenaphthylene	87	108	14.8	98	15.2
Anthracene	120	14	75.0	<b>L9</b>	111.9
4-Bromophenyl phenyl ether	79	134	38.9	107	36.5
Bis (2-chloroisopropyl)ether	45	86	0.7	86	0.7
Bis (2-chloroethoxy)methane	81	93	8.5	87	9.8
Hexachlorobutadiene	106	107	0.7	107	0.7
Hexachlorocyclopentadiene	9	118	83.4	59	141.4
Isosphorone	85	124	27.6	105	26.4
Naphthalene	83	06	4.9	87	5.7
Nitrobenzene	98	88	1.4	87	1.6
Benzo(ghi)perylene	98	126	28.3	106	26.7
Fluorene	84	111	19.1	96	19.6
Phenanthrene	86	113	10.6	106	10.1
Dibenzo(a,h)anthracene	91	128	26.2	110	23.9
Indeno (1,2,3-cd) pyrene	87	124	26.2	106	24.8
Pyrene	7.2	136	45.3	104	43.5
1,2-Diphenylhydrazine	≨	¥	0.0	0	ERR
Standard Deviation (n-1)	22.9	62.7			
Mean	83.2	114.9			
Coefficient of Variation	27.5	54.6			

	TABLE A.4-	TABLE A.4-3 (Continued)	<b>(</b> p		(Continued)
Sample I.D. Date Extracted Date Injected	8605078-10A 4/22/86 5/29/86	8602078-07A 5/15/86 5/21/86	STANDARD DEVIATION	HEAN	COEFFICIENT OF
Parameter	% Recovery	% Recovery	SD (n-1)	Z Recovery	CV - X
SURROGATE SPIKE COMPOUNDS					
ACID FRACTION					
d5-Phenol	67	7.1	2.8	0.69	4.1
2-Fluorophenol	85	16	8.8	50.5	9.96
2,4,6-Tribromophenol	83	114	19.1	100.5	19.0
d3-Phenol	NR	N.	-		;
BASE FRACTION					
d5-Nitrobenzene	104	98	12.7	95.0	13.4
2-Fluorophenyl	11	103	18.4	0.06	20.4
d14-Terpheny1	84	65	12.0	56.5	21.3
d10-Biphenyl	NR	X.	1	-	!

7 221

NR = Not Reported ND = Not Detected

EPA METHOD 8270: SURROGATE SPIKE RECOVERY RESULTS FOR SOIL SAMPLES TABLE A.4-4A

RECEIPTION SEESEN BEEFER BEFEREIGH (SEESEN BESSESSIE)

KERCERO DESERVA DESERVA DESERVA DE LA PROPERTA DEL PROPERTA DEL PROPERTA DE LA PROPERTA DEL PROPERTA DEL PROPERTA DE LA PROPERTA DEL PROPERTA DE LA PROPERTA DE LA PROPERTA DEL PROPERTA DEL PROPERTA DEL PROPERTA DE LA PROPERTA DEL PROPE

Soil				ACI	ACID PRACTION	
Lab I.D.	8	DATE	d5-Phenol Recovery	2-Fluorophenol R Recovery	2,4,6-Tribromophenol % Recovery	d3-Phenol
8605078-01A		52286	55	45	130	Z.
8605078-02A		52286	20	42	123	X.
8605078-03A		52286	62	44	122	N.
8605078-04A		52286	7.1	11	106	X
8605078-05A		52286	88	65	06	XX
8605078-06A	D1	52286	55	25	58	X.
8605078-07A	D2	52286	9	18	7.1	N.
Standard Deviation (n-1)	stion (	n-1)	12.8	19.2	26.9	!
Mean			<b>64</b>	44	101	}
Coefficient or Variation	1 Varia	tion	20.1	43.4	26.7	1

D = Duplicate Analysis

TABLE A.4-4B
EPA METHOD 8270: SURROGATE SPIKE RECOVERY RESULTS FOR SOIL SAMPLES

2011				BASE FRACTION	NOTE	
Lab I.D.	ၓ	DATE	d5-Nitrobenzene	2-Fluorobiphenyl d14-Terphenyl d10-Biphenyl Recovery Recovery	d14-Terphenyl Z Recovery	d10-Biphenyl R Recovery
8605078-01A		52286	76	100	55	X.
8605078-02A		52286	70	114	20	N.
8605078-03A		52286	80	109	63	NR
8605078-04A		52286	61	104	7.1	N.
8605078-05A		52286	111	132	61	æ
8605078-06A	D1	52286	57	88	51	XX
8605078-07A	D2	52286	49	97	57	X.
Standard Deviation (n-1)	#tion	(n-1)	20.2	14.1	7.4	†
Mean			7.7	106	58	-
Coefficient of Variation	f Vari	ation	26.1	13.3	12.6	

TABLE A.4-5

WARD CHARGE BARRASE SERVICE AND ACCOUNT OF THE CONTROL OF THE CONT

EPA HETHOD 8240: SURROGATE SPIKE RECOVERY RESULTS FOR SOIL SAMPLES

ene		
Bromofluorobenzene	92 113 82 82	14.6 92 15.8
d8-Toluene	102 101 93 93	4.9 97 5.1
d4-1,1-Dichloroethane d8-Toluene X Recovery	96 96 98 98 98	7.5 91 8.3
QC DATE	31786 31786 33186 33186	(n-1)
૪		ation of Var
LAB ID	8603021-06A 8603021-07A 8603184-01A 8603184-02A	Standard Deviation (n-1) Mean Coefficient of Variation

TABLE A.4-6

ANNAL CONTRACTOR NECESSARIA CONTRACTOR CONTR

QC SAMPLE RESULTS FOR METALS ANALYSES IN SOLID SAMPLES

					OC Check	Matrix Spike	Analyses	Blanks
		Analysis	SAM	SAM				1
arameter	Method	Date	Workorder Fraction	Fraction	X Recovery	X Recovery	X RPD	(ng/mj)
<b>9V</b>	a DI	27-Feb	8601205	8	66	! ! ! ! ! !	1 1 1 1 1 1 1 4 4 4 1 1	
Ą	ICP	27-Feb	8601205	ጵ	66			
\$	ICP	27-Feb	8601205	8	101			
<b>\$</b>	ICP	27-Feb	8601205	8	66			
y V	ICP	26-Mar	8601206	8	86			
*	ICP	26-Mar	8601206	ጵ	103			
Ą	ICP	26-Mar	8601206	૪	103			
Ą	ICP	26-Mar	8601206	8	103			
ye V	ICP	23-Apr	8603008	8	"			
y V	ICP	23-Apr	8603008	8	9/			
8	ICP	23-Apr	8603008	8	"			
\$	ICP	16-May	8603176	8	96			
\$	ICP	16-May	8603176	8	95			
¥	ICP	11-Aug	8707086	8	76			
y V	ICP	11-Aug	8707086	ያ ያ	93			
ν	ICP	23-Apr	8603008	-01		1 6	•	
<b>8</b>	ICP	26-Mar	8601206	-04		56		
₹	ICP	26-Mar	8601206	-01		98	•	
<b>9</b>	ICP	16-May	8603176	-03		76	4	
8	ICP	19-Aug	8707086	-05		5.88	a.	
<b>8</b>	ICP	26-Mar	8601206	<b>9</b> 0-			12 p	
A8	ICP	26-Mar	8601206	-05			6.1	
V8	ICP	23-Apr	8603008	-01			13 .	
V V	ICP	16-May	8603176	-02			NC	
9 V	ICP	19-Aug	8707086	-05			16	
y y	ICP	27-Feb	8601205	Blank				<.002
A8	ICP	27-Feb	8601205	Blank				<.002
<b>9</b>	ICP	26-Mar	8601206	Blank				<.002
¥	971							

TABLE A.4-6 (Continued)

QC SAMPLE RESULTS FOR METALS ANALYSES IN SOLID SAMPLES

					QC Check	Matrix Spike	Analyses	Blanks
Parameter	Method	Analysis Date	SAM SAM Wo.korder Fraction	SAM	I Recovery	X Recovery	X RPD	(ng/Bl)
*	ICP	16-May	8603176	Blank	+ + + + + + + + + + + + + + + + + + +	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	[	<.002
*	ICP	19-Aug	8707086	81 ank				<.002
Mean	1 1 6 1 1 1	 		; ; ; ; ; ; ; ;	76	82	12	
RSD (X)					10.2	19.4		
A3	\$	10-Mar	8601206	&	108			
As	ICP	23-Apr	8603008	ጵ	113			
4	ICP	23-Apr	8001098	8	119			
Y:	ICP	23-Apr	8603008	8	113			
¥	ICP	16-May	8603176	Ş	97			
4	ICP	16-May	8603176	ષ્ટ્ર	66			
<b>V</b>	\$	11-Aug	8707086	8	96			
4	\$	11-Aug	8707086	8	95			
Y?	\$	10-Mar	8601206	-07C		100	_	
¥\$	\$	10-Mar	8601206	-07C		1 56	•	
4	\$	19-Aug	8707086	-02		' 56		
As	\$	19-Au	8707086	-05		83	0.	
¥	ICP	16-May	8603176	-03		74	•	
4	\$	10-Mar	8601206	-08C			MC D	
<b>V</b>	ICP	23-Apr	8603008	-01			3.2	
As	ICP	16-May	8603176	-02			Q.	
¥	\$	19-Aug	8707086	-02			N.C	
4.	ICP	23-Apr	8603008	Blank				· · 000
٧	ICP	16-May	8603176	Blank				090°>
As	\$	19-Aug	8707086	Blank				<.003
Mean			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		105	68	3.2	; ; ; ; ; ; ; ;
(1)					,	•		

TABLE A.4-6 (Continued) qc sample results for hetals analyses in solid samples

AND DESCRIPTION OF THE PROPERTY OF THE PROPERT

		Analysis	SAM	SAM				
Arabeter	Method	Date	Workorder Fraction	Fraction	X Recovery	I Recovery	X RPD	(18/8n)
; ; ; ; ;	! ! ! ! ! !	 	! ! !					
Ba	ICP	27-Feb	8601205	ጵ	66			
B	ICP	27-Feb	8601205	8	66			
BA	ICP	27-Feb	8601205	8	100			
B	ICP	27-Feb	8601205	8	66			
Ba	ICP	26-Mar	8601206	ક	66			
B	ICP	26-Mar	8601206	8	8			
<b>g</b>	ICP	26-Mar	8601206	ષ્ટ્ર	46			
4	ICP	26-Mar	8601206	8	96			
Ва	ICP	23-Apr	8603008	ጵ	103			
4	ICP	23-Apr	8603008	8	101			
4	ICP	23-Apr	8603008	8	104			
B	ICP	16-May	8603176	ጵ	103			
B	ICP	16-May	8603176	ጵ	102			
BA	ICP	11-Aug	8707086	ጵ	105			
<b>4</b>	ICP	11-Aug	8707086	8	101			
В	ICP	23-Apr	8002098	-01		170 1	<u>a</u>	
8	ICP	26-Mar	8601206	<b>*</b> 0-		16		
e	ICP	26-Mar	8601206	-07		85		
8	ICP	16-May	8603176	-03		81 1	c.	
Ba	ICP	19-Aug	8707086	-05		81	۵.	
<b>e</b>	ICP	26-Mar	8601206	-05			•	
g g	ICP	26-Mar	8601206	80-			20 P	
e E	ICP	23-Apr	8603008	-01			0.0	
Ba	ICP	16-May	8603176	-02			7.0	
Ba	ICP	19-Aug	8707086	-02			1.3 p	
<b>6</b>	ICP	19-Aug	8707086	Blank				<.001
Ba	ICP	27-Feb	8601205	Blank				•.001
ď	ICP	16-May	8603176	Blank				< .001

TABLE A.4-6 (Continued) qc sample results for metals analyses in solid samples

					QC Check	Matrix Spike	Analyses	Blanks
Parameter	Method	Analysis Date	SAM SAM Workorder Praction	SAM Praction	I Recovery	X Recovery	X RPD	(u <b>g</b> /ml)
B	ICP	27-Feb	8601205	Blank		 	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<.001
g B	ICP	26-Mar	8601206	Blank				0.008
đ	ICP	23-Apr	8603008	Blank				*.002
Mean	1 1 1 1 1 1 1	 	: : : : : :	! ! ! ! ! ! !	101	102	5.7	; ; ; ; ; ; ; ;
RSD (X)					3.0	37.8		
3	ICP	27-Feb	8601205	8	100			
3	ICP	27-Feb	8601205	S,	100			
3	ICP	27-Feb	8601205	8	100			
3	ICP	27-Feb	8601205	ጵ	103			
3	ICP	26-Mar	8601206	ጵ	96			
3	ICP	26-Mar	8601206	8	101			
3	ICP	26-Mar	8601206	ጵ	107			
3	ICP	26-Mar	8601206	ጵ	101			
8	ICP	23-Apr	8603008	ጵ	103			
3	ICP	23-Apr	8603008	8	104			
8	ICP	23-Apr	8603008	8	104			
23	ICP	16-May	8603176	ጵ	102			
B	ICP	16-May	8603176	ጵ	100			
Cq	ICP	11-Aug	8707086	8	104			
25	ICP	11-Aug	8707086	&	104			
3	ICP	26-Mar	8601206	<b>7</b> 0-		98		
3	ICP	26-Mar	8601206	-07		85	<u> </u>	
B	ICP	19-Aug	8707086	-05		99	۵.	
8	ICP	16-May	8603176	-03		1 59	•	
3	ICP	23-Apr	8603008	-01		1 09		
25	ICP	26-Mar	8601206	-08			NC P	

TABLE A.4-6 (Continued)

RECENTIFICATION OF THE PROPERTY OF THE PROPERT

QC SAMPLE RESULTS FOR METALS ANALYSES IN SOLID SAMPLES

Analysis         SAM         Analysis         SAM           Cd         ICP         23-Apr         8603008         -0.1           Cd         ICP         16-May         8601205         Blank           Cd         ICP         27-Pab         8601205         Blank           Cd         ICP         24-Pab         8601205         QC         98           Cr         ICP         27-Pab         <				į	QC Check	Matrix Spike	Duplicate Analyses	Reagent
ICP         23-Apr         8603008         -01           ICP         16-May         8603176         -02           ICP         19-Aug         8707086         -02           ICP         27-Peb         8601205         Blank           ICP         27-Peb         8601205         Blank           ICP         27-Peb         8601205         Blank           ICP         24-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8603008         QC           ICP         23-Apr         8603		nalysis Date		SAM Fraction	X Recovery	X Recovery	X RPD	(ng/ml)
ICP         16-May         8603176         -02           ICP         19-Aug         8707086         -02           ICP         27-Peb         8601205         Blank           ICP         27-Peb         8601205         Blank           ICP         27-Peb         8601205         Blank           ICP         23-Apr         8603008         Blank           ICP         24-Peb         8601205         QC           ICP         24-Peb         8601205         QC           ICP         27-Peb         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         86	ICP	23-Apr	8603008	-01			0.63	
ICP         19-Aug         8707086         -02           ICP         27-Feb         8601205         Blank           ICP         26-Har         8601205         Blank           ICP         27-Feb         8601205         Blank           ICP         27-Feb         8601205         Blank           ICP         23-Apr         8603008         Blank           ICP         24-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603108         QC           ICP         23-Apr	ICP	16-May	8603176	-02			NC	
ICP         27-Feb         8601205         Blank           ICP         26-Mar         8601206         Blank           ICP         19-Aug         8707086         Blank           ICP         27-Feb         8601205         Blank           ICP         23-Apr         8603176         Blank           ICP         24-Feb         8601205         Mank           ICP         24-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603106         QC           ICP         23-Apr <td< td=""><td></td><td>19-Aug</td><td></td><td>-02</td><td></td><td></td><td>MC P</td><td></td></td<>		19-Aug		-02			MC P	
ICP         26-Mar         8601206         Blank           ICP         19-Aug         8707086         Blank           ICP         27-Feb         8601205         Blank           ICP         24-Feb         8601205         Blank           ICP         24-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603106         QC           ICP         16-May         8603		27-Feb		Blank				<.002
ICP         19-Aug         8707086         Blank           ICP         27-Feb         8601205         Blank           ICP         16-Hay         8603176         Blank           ICP         23-Apr         8603008         Blank           ICP         24-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Har         8601206         QC           ICP         26-Har         8601206         QC           ICP         26-Har         8601206         QC           ICP         26-Har         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603106         QC           ICP         16-Hay         8603176         QC           ICP         16-Hay         8603	ICP	26-Mar	8601206	Blank				<.002
ICP         27-Feb         8601205         Blank           ICP         16-May         8603176         Blank           ICP         23-Apr         8603008         Blank           ICP         24-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603108         QC           ICP         23-Apr         8603108         QC           ICP         16-May         8603176         QC           ICP         16-May         8603108		19-Aug		Blank				<.002
ICP         16-May         8603176         Blank           ICP         23-Apr         8603008         Blank           ICP         24-Peb         8601205         QC           ICP         24-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603176         QC           ICP         23-Apr         8603176         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC		27-Feb		Blank				<.002
ICP       23-Apr       8603008       Blank         ICP       24-Feb       8601205       QC         ICP       24-Feb       8601205       QC         ICP       27-Feb       8601205       QC         ICP       27-Feb       8601205       QC         ICP       27-Feb       8601205       QC         ICP       27-Feb       8601205       QC         ICP       26-Mar       8601206       QC         ICP       26-Mar       8601206       QC         ICP       26-Mar       8601206       QC         ICP       23-Apr       8603008       QC         ICP       23-Apr       8603008       QC         ICP       23-Apr       8603008       QC         ICP       23-Apr       8603176       QC         ICP       16-May       8603176       QC         ICP       16-May       8603176       QC         ICP       16-May       8603176       QC         ICP       16-May       8603176       QC	ICP	16-May	8603176	Blank				<.002
ICP         24-Feb         8601205         QC           ICP         24-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC	ICP	23-Apr		Blank				<.002
ICP         24-Peb         8601205         QC           ICP         24-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         27-Peb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603176         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         11-Aug         8707086         QC				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	102	12	9.0	! ! ! !
ICP         24-Feb         8601205         QC           ICP         24-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC         1           ICP         23-Apr         8603008         QC         1           ICP         23-Apr         8603106         QC         1           ICP         16-May         8603176         QC         1           ICP         16-May         8603176         QC         1           ICP         16-May         8603176         QC         1					2.6	16.8		
ICP         24-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601205         QC         1           ICP         26-Mar         8601206         QC         1           ICP         26-Mar         8601206         QC         1           ICP         26-Mar         8601206         QC         1           ICP         23-Apr         8603008         QC         1           ICP         23-Apr         8603008         QC         1           ICP         23-Apr         8603008         QC         1           ICP         16-May         8603176         QC         1           ICP         16-May         8603176         QC         1           ICP         16-May         8603176         QC         1	ICP	24-Feb	8601205	8	86			
ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601205         QC         1           ICP         26-Mar         8601206         QC         1           ICP         23-Apr         8603008         QC         1           ICP         23-Apr         8603108         QC         1           ICP         23-Apr         8603108         QC         1           ICP         16-May         8603176         QC         1           ICP         16-May         8603176         QC         1           ICP         11-Aug         8707086         QC         1	ICP	24-Feb		8	86			
ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC         1           ICP         23-Apr         8603008         QC         1           ICP         23-Apr         8603008         QC         1           ICP         16-May         8603176         QC         1           ICP         16-May         8603176         QC         1           ICP         11-Aug         8707086         QC         1	ICP	27-Feb		8	86			
ICP         27-Feb         8601205         QC           ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603108         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         11-Aug         8707086         QC	ICP	27-Feb		ጵ	86			
ICP         27-Feb         8601205         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         11-Aug         8707086         QC	ICP	27-Feb		8	86			
ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         11-Aug         8707086         QC	ICP	27-Feb	8601205	8	101			
ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         11-Aug         8707086         QC	ICP	26-Mar	8601206	8	66			
ICP         26-Mar         8601206         QC           ICP         26-Mar         8601206         QC         1           ICP         23-Apr         8603008         QC         1           ICP         23-Apr         8603008         QC         1           ICP         23-Apr         8603008         QC         1           ICP         16-May         8603176         QC         1           ICP         16-May         8603176         QC         1           ICP         11-Aug         8707086         QC         1	ICP	26-Mar	8601206	8	100			
ICP         26-Mar         8601206         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         11-Aug         8707086         QC	ICP	26-Mar	8601206	ጵ	96			
ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         11-Aug         8707086         QC	ICP	26-Mar	8601206	8	100			
ICP         23-Apr         8603008         QC           ICP         23-Apr         8603008         QC           ICP         16-May         8603176         QC           ICP         16-May         8603176         QC           ICP         11-Aug         8707086         QC		23-Apr		8	105			
ICP     23-Apr     8603108     QC       ICP     16-May     8603176     QC     1       ICP     16-May     8603176     QC     1       ICP     11-Aug     8707086     QC     1		23-Apr		8	105			
ICP 16-May 8603176 QC ICP 16-May 8603176 QC ICP 11-Aug 8707086 QC	ICP	23-Apr		8	66			
ICP 16-May 8603176 QC ICP 11-Aug 8707086 QC	ICP	16-May	8603176	8	102			
ICP 11-Aug 8707086 QC	ICP	16-May	8603176	8	101			
	ICP	11-Aug	8707086	8	105			

TABLE A.4-6 (Continued)

QC SAMPLE RESULTS FOR METALS ANALYSES IN SOLID SAMPLES

					QC Check	Matrix Spike	Analyses	Blanks
		Analysis	SAR	SAM	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1	1 1 1
Parameter	Method	Date	Workorder Fraction	Fraction	I Recovery	X Recovery	X RPD	(ng/m)
Ç	ICP	11-Aug	8707086	<del>ွ</del>	106			
Ç	ICP	27-Feb	8601205	-13A		06		
Ç	ICP	26-Mar	8601206	•0-		06	•	
Cr	ICP	26-Mar	8601206	-01		1 58	<u>-</u>	
č	ICP	16-May	8603176	-03		19	<b>a.</b>	
S	ICP	23-Apr	8603008	-01		79	۵.	
2	ICP	19-Aug	8707086	-05		1.1	<b>a</b> .	
ů	ICP	24-Feb	8601205	-12A			2.7	۵.
ភ	ICP	27-Feb	8601205	-12A			2.7	<b>_</b>
ç	ICP	26-Mar	8601206	<b>8</b> 0-			2	۵.
Ç	ICP	26-Mar	8601206	-05			•	•
Ç	ICP	23-Apr	8603008	-01			0.0	•
3	ICP	16-May	8603176	-02			SC	
Ç	ICP	19-Aug	8707086	-03			37	Δ.
Cr	ICP	24-Feb	8601205	Blank				< .005
Ç	ICP	27-Feb	8601205	Blank				< .005
Ç	ICP	26-Mar	8601206	Blank				<.005
Ç	ICP	27-Feb	8601205	Blank				< .005
ភ	ICP	19-Aug	8707086	Blank				<.005
C	ICP	16-May	8603176	Blank				<.005
Cr	ICP	23-Apr	8603008	Blank			1	<b>*</b> .006
Mean	 	, , , , , , ,	: : : : : : :	1 1 1 1 1 1 1 1 1	101	78	8.5	
RSD (X)					3.0	6.7		
.E	\$	06-Mar	8601206	8	105			
H.	₹	06-Mar	8601206	૪	100			
æ	₹	06-Mar	8601206	ጵ	100			
3	•	:						

TABLE A.4-6 (Continued) qc sample results for metals analyses in solib samples

System recessed Sobbosed Sessessed Register Property Villian Reserved Toppins Control Collina Reserved Toppins Collina Reserved Sobbosed Collina Reserved Colli

					QC Check	Matrix Spike	Analyses	Blanks
		Analysis	SAM	SAM			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Parameter	Method	Date	Workorder Fraction	Fraction	I Recovery	Z Recovery	X RPD	(n <b>g/m</b> J)
	*	25-Apr	8603008	8	92			; ; ; ; ; ; ; ;
H	₹	25-Apr	8603008	8	96			
H	\$	30-Apr	8603008	8	100			
H	\$	06-May	8603176	8	92			
H	₹	06-May	8603176	8	92			
88 88	\$	06-May	8603176	Ş	100			
H	\$	12-Aug	8707086	&	103			
H	₹	12-Aug	8707086	Ş	93			
H	\$	12-Aug	8707086	8	06			
H	\$	06-Mar	8601206	-08C		1001	a	
H	₹	30-Apr	8603008	-02		100		
H	₹	19-Aug	8707086	-05		9 08	a	
Hg	\$	06-Mar	8601206	-08C			MC P	
B.	₹	25-Apr	8603008	-01			2.7	
H	\$	25-Apr	8603008	Blank				<.0002
88	\$	06-May	8603176	Blank				<.0001
3 <b>5</b>	₹	06-May	8603176	Blank				<.0001
<b>39</b>	\$	25-Apr	8603008	Blank				<.0002
H	\$	19-Aug	8707086	Blank				<.0002
H.	\$	30-Apr	8603008	Blank				<.0002
323 323	\$	06-May	8603176	Blank				<.0001
Mean	; ; ; ; ; ;	: : : : : :			76	93	2.7	
RSD (X)					5.0	12.4		
2	\$	07-Mar	8601206	8	100			
a P	₹	07-Mar	8601206	8	100			
Pb	\$	07-Mar	8601206	Ş	95			

TABLE A.4-6 (Continued) qc sample results for metals analyses in solid samples

SSSANT PROVINCE OFFICE OFFICE CONTROL OF THE PROVINCE OF THE P

		•	į	;	QC Check	Matrix Spike	Analyses	Blanks
		Analysis	WS .	NY .				
Parameter	Method	Date	Workorder Fraction	Fraction	X Recovery	X Recovery	Carrier 1	(ug/m)
ଣ୍ଟ	ICP	23-Apr	8603008	8	69	1 1 1 1 1 1 1 1 1 1 1	! ! ! ! ! ! ! ! !	1
Pb	ICP	23-Apr	8603008	8	100			
a.	ICP	16-May	8603176	8	88			
Pb	ICP	16-May	8603176	8	68			
Pb	₹	11-Aug	8707086	8	100			
Pb	₹	11-Aug	8707086	8	102			
<b>2</b>	\$	19-Aug	8707086	-02		100	•	
P.	₹	19-Aug	8707386	-05		92	•	
a.	ICP	23-Apr	8603008	-01		81	•	
<b>2</b>	ICP	16-May	8603176	-03		75	۵.	
2	\$	10-Mar	8601206	-070				
P.	\$	10-Mar	8601206	2 <b>4</b> 0-				
P.	\$	10-Mar	8601206	-08C			a. SE	
P.	ICP	23-Apr	8603008	-01			MC MC	
<b>2</b>	ICP	16-May	8603176	-02			NC	
<b>2</b>	ICP	23-Apr	8603008	Blank				\$0·>
Pb	\$	19-Aug	8707086	Blank				•.004
Pb	₹	19-Aug	8707086	Blank			0.0	
ą.	ICP	16-May	8603176	Blank	,			80.>
Kean					97	87	0.0	
RSD (X)					5.2	12.8		
S.	\$	09-Mar	8601206	8	96			
Se	\$	09-Mar	8601206	8	86			
Se	₹	09-Mar	8601206	8	100			
Se	ICP	23-Apr	8603008	8	105			
Se	ICP	23-Apr	8603008	8	101			
ć								

TABLE A.4-6 (Continued)

QC SAMPLE RESULTS FOR METALS ANALYSES IN SOLID SAMPLES

					QC Check	Matrix Spike	Dupilcate Analyses	Blanks
		Analysis	SAM	SAM	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Parameter	Method	Date	Workorder Fraction	Fraction	I Recovery	X Recovery	X RPD	(ug/mJ)
S.	ICP	16-May	8603176	ጵ	101			
S.	ICP	16-May	8603176	8	97			
S.	\$	11-Aug	8607088	ጵ	92			
S.	\$	11-Aug	8607088	8	06			
\$ <b>.</b>	\$	11-Aug	8607088	8	98			
S.	\$	11-Aug	8607086	8	88			
Şe	\$	09-Mar	8601206	-01		62	Q.	
S.	\$	09-Mar	8601206	<b>*</b> 0-		23		
S.	\$	09-Mar	8601206	₹0-		₹ 62	p,4	
S	\$	19-Aug	8607086	-02		120 ▲	<b>P</b> , <b>4</b>	
S.	\$	19-Aug	8607086	-05		87	۵.	
Se	\$	19-Aug	8607086	-02		9,0		
S.	ICP	16-May	8603176	-03		1 69	<u>a.</u>	
Se	\$	09-Mar	8601206	-08C			NC	
Se	\$	09-Mar	8601206	-04C			N.C	
Se	ICP	23-Apr	8603008	-01			1.9	
Se	ICP	16-May	8603176	-02			NC	
Se	ICP	23-Apr	8603008	Blank				×.08
Se	₹	19-Aug	8607086	Blank				< .002
S.	\$	09-Mar	8601206	Blank				< .002
Se	ICP	16-May	8603176	Blank				×.08
Mean	\$ } [ ] !	, f l l l		! ! ! !	16	47	1.9	
						3 00		

a - analytical spike or duplicate

p - predigestion spike or duplicate

TABLE A.4-6 (Continued) qc sample results for metals analyses in solib samples

AND CONTROL SECTION OF THE SECTION O

								•
							Duplicate	Keagent
					QC Check	QC Check Matrix Spike Analyses	Analyses	Blank
		Analysis	SAM	SAM				
rameter	Method	Date	Parameter Method Date Workorder Fraction	Fraction	X Recovery	X Recovery	X RPD	X RPD (ug/ml)

d - spiked sample recovery after 1:10 dilution
 NC - RPD not calculated if both values are less than

five times the detection limit

Gross  $\alpha/\beta$  QA/QC

12-18-85

			Net Act:	ivities	
			α	β	
I	Dup	licate Samples			
	1)	860048 SB-11-C	6.5 <u>+</u> 6.2 7.6 <u>+</u> 5.8	$\begin{array}{c} 16.8 \pm 4.1 \\ 10.0 \pm 3.9 \end{array}$	pCi/g pCi/g
	2)	860260 - 03A	$3.3 \pm 2.4$ $3.5 \pm 2.3$	$7.2 \pm 2.2$ $5.6 \pm 2.1$	pCi/L pCi/L
II.	Dup	licate Counts	<1.6	<4.2	pCi/L
		860259 - 02A	3.6 <u>+</u> 4.0	<4.2	pCi/L
III.	Sam	ples Spiked with 10uL <sup>241</sup> Am +	0.5 mL <sup>90</sup> Sr 5	Standard Solut	ions
	1)	860259 - 02A + Mixed Spike (corrected for sample volume = 65 mL)	21.0 <u>+</u> 5.2	131.1 <u>+</u> 7.7	pCi/L
		Mixed spike alone	2.4 <u>+</u> 0.3	9.6 <u>+</u> 0.5	pCi/spike
		860259 - 02A alone	<1.6	<4.2	pCi/L
	2)	860038 SB-6-D + Mixed Spike (corrected for sample mass = 0.10158g)	87.9 <u>+</u> 10.5	113.6 <u>+</u> 7.0	pCi/g
		Mixed spike alone	1.7 <u>+</u> 0.3	7.2 <u>+</u> 0.5	pCi/spike
		860038, SB-6-D alone	12.4 <u>+</u> 7.9	19.5 <u>+</u> 4.3	pCi/g
IV.	DIW	Blanks, Duplicate Samples			
		0.5 L 0.5 L	<0.4 <0.4	<0.7 <0.7	pCi/L pCi/L

#### V. Stock Standard Solutions

	<u> </u>	β	Date Counted
Am	2.18 <u>+</u> 0.3 2.34 <u>+</u> 0.3	0.55 <u>+</u> 0.3 0.76 <u>+</u> 0.3	8/18 9/9
Sr-90	<0.4 <0.4	6.52 <u>+</u> 0.4 7.53 <u>+</u> 0.5	8/19 9/6
Mixed	1.69 ±0.3 2.40 ±0.3	7.22 <u>+</u> 0.5 9.56 <u>+</u> 0.5	8/18 9/6

#### VI. Standard Instrument Check Sources (1 minute counts)

		<u> </u>	β
C14	1986 Avg.	-	59019 <u>+</u> 1025 (1.7%) 58878
	1 Jul	-	58540 59038
	13 Aug	-	58636
Pb-210	1986	1189 <u>+</u> 73 (6.1%) 1144	2266 <u>+</u> 223 (9.8%) 2203
	1 Jul	1106 1133	2055 2098
	13 Aug	1226	1995

TABLE A.4-8

errel bourres errere sessone erresentation of best and experience errerered best and best and best and best and

#### AIR FORCE GAMMA CS-137 QA/QC

I.	EPA-LV Interlab Unknown CS-137 Meas. EPA Reported Actual	11.2 <u>+</u> 2.0 10 <u>+</u> 5		(6/30)
II.	Duplicate Counts			Detector
	1) 860038 SB-6-D (97.0 g (in teflon jar))	<46 <41		Lo-Pro Lo-Pro
	2) 860258-01A	<10.7 <9.9		Lo-Pro Lo-Pro
	3) 860259-02A	<12.6 <12.9		Hi-Pro Hi-Pro
III.	CS-137 Std in Teflon Jar			
	8-13 8-22 8-13 8-22 Activity based in known std. concen.	238169 239918 235603 240559 237498	pCi	Hi-Pro Lo-Pro
IA.	1) DIW Blank in Teflon Jar 0.093 kg in Teflon Jar	<71 pCi/kg <100 pCi/k		Lo-Pro Hi-Pro
	2) DIW Blank in Marinelli Beaker (1.00 ug)	<3.4 pCi/l	cg	Lo-Pro

CS-137 Standard in Marinelli Beaker

Lo-Pro	Net cps Hi-Pro	Date
-	8.41	3/10
-	8.17	6/9
11.63	-	6/10
-	8.03	8/28
11.16	-	8/29
_	7.98	10/24
11.40	_	10/25
11.57	7.87	10/27
11.38	-	12/3
		, -
11.43 +0.18	8.09 +0.21	Avg.

#### RADIAN

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RADIAN		
	CHAIN OF CUSTODY RECO	RD
		Field Sample No. 860024
Company Sampled / Address _A/R _A	FORCE PLANT 4	
Sample Point Description 58-4		
Stream Characteristics: N/A		
Temperature		
Visual Observations/Comments		
Collector's Name PETER A WAT		
Amount of Sample Collected / Va		
Sample Description $\underline{\mathcal{T}P-4}$ FUStore at: $\Box$ Ambient $\Box$ 5°C $\Box$ $-$	IEL	
Caution - No more sample available	☐ Return unused portion of s	ample   Discard unused portions
Other Instructions - Special Handling -	Hazards JP-4 FU	LEL
	•	
☐ Hazardous sample (see below)	□ Non-	hazardous sample
☐ Toxic	☐ Skin irritant	□ Flammable (FP<
□ Pyrophoric	☐ Lachrymator	☐ Shock sensitive
□ Acidic	□ Biological	□ Carcinogenic - su
□ Caustic	□ Peroxide	□ Radioactive
□ Other		
Sample Allocation / Chain of Possessio	n:	
Organization Name		124 (1)
Received By	Date Rece	eived $\frac{135-36}{(130)(305)}$ Time $\frac{133}{(130)(305)}$
Transported By ( ) I' VV /	Lab Sample No	3001a03
	}	
Comments	J	
	J	
Comments Inclusive Dates of Possession Organization Name		
Comments Inclusive Dates of Possession Organization Name Received By	Date Reco	elved Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By	Date Reco	elved Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments	Date Reco	eived Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By	Date Reco	eived Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments	Date Reco	eived Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments Inclusive Dates of Possession	Date Reco	elved Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments Inclusive Dates of Possession Organization Name	Date Reco	pived Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments	Date Reco	Dived Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments Inclusive Dates of Possession Organization Name Received By Transported By	Date Reco	Dived Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments	Date Reco	Dived Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments	Date Reco	eived Time
Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments Inclusive Dates of Possession Organization Name Received By Transported By Comments	Date Reco	Pived Time

Form V

			Q. C. Report No	o. <u>/ -</u>		
		j., (	SPIKE SAMPLE		20	•
LAB N	AME/	Padian	_ Analytica	CASE NO	. Clart	<del>/</del>
DATE		2-27-86	_ Analytica _	EPA San	mple No.	- 5601 205-13
			Hatrix Soul	Units	ug/nl	
Сощро	und	Control Limit	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	
Mecal		300	( MESCIC (35K)	RESULE (SK)	Added (SA)	1
	luminum	75=125			I I	i i
_	ntimony	-		<del> </del>		<u></u>
_	rsenic	-		<del>'</del>	! 	<u>'</u> '
_	arium	•			<u></u>	<del></del> -
_	eryllium	•				<del></del> -
-	admium	•				<del></del>
_	alcium	•				
_	hromium	•	0.94	0.04	1.00	190
9. 0	obalc	•				
_	opper	•			l	1
11. <u>I</u>	ron	•				
12. <u>L</u>	ead	•			İ	
13. 🛚	agnesium	•				
14. 4	anganese	•				
15. <u>H</u>	ercury	•				
16. X	1ckei	•				
17. P	otassium	•			į	1
18. <u>s</u>	elenium	•		·		
19. <u>s</u>	ilver	•				
20. <u>s</u>	od1um	•				
21. <u>T</u>	hallium	•				
22. <u>T</u>	in	•				
23. ₹	anadium	•				
24. <u>Z</u>	inc	•				
Other	:				•	
						<u> </u>
Cyani	de	•				1!
1 23	= [(SSR -	- SR)/SA  x 100				
	out of c					
Comme	nes:					

Form VI

ο.	c.	Report	No.	/-
v.	٠.			

	Q. C.	Report No		
<u> </u>		DUPLICATES	Marine Mari	44
	adiax_	Matrix	CASE NO. <u>[[]</u> EPA Sample No.	77-
DATE	2-27-86		Lab Sample ID to Units ug/nl	. 81001305-12
	Hat:	1x H20	Units ug/m	
Cozoquas	Control Limit	Sample(S)	Duplicate(D)	RPD-
Metals:				
1. Aluminum	<u> </u>		1	
<ol> <li>Antimony</li> <li>Arsenic</li> </ol>	!			<del>:</del> :
4. Barium	<u>                                       </u>	- <del></del>	1	
5. Beryllium	1	1		
6. Cadzium				
7. Calcium	1			
8. <u>Chromium</u>		7.3	7.5	2.7
9. <u>Cobalt</u>	<u> </u>	<u> </u>	<del></del>	<u> </u>
10. Copper	<u> </u>	<del>!</del>		
ll. Iron		<u> </u>		
12. Lead	}			!
13. Magnesium			<u></u>	
14. Manganese 15. Mercury	1		1	1
16. Nickel		<u> </u>	1	1
17. Potassium	<u> </u>			
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium			<u> </u>	
22. <u>Tin</u>	<u> </u>	<del> </del>		
23. Vanadium				
24. Zinc		1	<del></del>	
Orbert	1	İ	1	1

Cyanide

The contract of the second sec

To be added at a later date.

<sup>\*</sup> Out of Control

 $<sup>2</sup> RPD = {|S - D|/((S + D)/2)} \times 100$ 

<sup>1 -</sup> Non calculable RPD due to value(s) less than CRDL

702 Workorders: 86 02001

86 02 019

F	0	T	2	II

					ort No			3		
LAB	NAME	Padian	AND CO		NG CALIBRATIO CASE	NO.				
		2.27-80		,	UNITS	io	_			
	pound	Initia			Cont					1 4
		True Value	Found	<del>                                    </del>	True Value	Found	<u> </u>	Found	<u> </u>	Method 4
	Aluminum						<u> </u>	<u> </u>	1 1	1
2.	Ancimony						1		1	1
	Arsenic					<del></del>				1
	Barium	1.00	0.99	99	1.00	1.00	100	0.99	1991	$\frac{P}{P}$
5.	Beryllium			1			1	<u> </u>	<u> </u>	1
6.	Cadmium	1.00	1-00	100	1.00	1.03	103	1.00	100	<u> </u>
7.	Calcium	<u> </u>	<del></del>							1
8.	Chromium	1.00	0.98	98	1.00	1.01	101	0.98	981	! P
9.	Cobalt									<u> </u>
10.	Copper			<u> </u>		·			<u> </u>	1
11.	Iron	<u> </u>								
12.	Lead									İ
13.	Magnesium								l i	
14.	Manganese							,		1
15.	Mercury								i	i
16.	Nickel									1
	Potassium									
18.	Selenium		<del></del>							1
	Silver	1,00	0.99	99	1.00	1.01	101	0.99	99	i P
	Sodium					<del></del>	<u> </u>			<del></del>
	Thallium						Ī		<u> </u>	<del></del>
22.	Tin			<del> </del>			<del></del>	<u></u>	<u> </u>	<del>†                                      </del>
23.	Vanadium		<del></del>							<del></del>
24.	Zinc						<del>                                     </del>		<del> </del>	<del></del>
	::			<u> </u>			<del>1</del>	<u> </u>	<u> </u>	<del></del>
A FII &	· ·						1	<u> </u>	1 1	+
Cyan	· da						<del> </del>	<del></del>	1 1	
		ibration Sou			<sup>2</sup> Continu		!		<u> </u>	

FARRES TO SOURCE TO CONTROL TO CONTROL TO SOURCE TO SOUR

3 Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

<sup>4</sup> Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II cont

	Q. C. Rep	ort No	
	INITIAL AND CONTINUE	NG CALIBRATION VERIFICATION3	
LAB NAME	Kadian	CASE NO. Mant 4	
		SOW NO.	
		40/0	

	•				SOW N	io			
DAI	Ε	2-27-80	<u></u>		UNITS	<u> </u>	7/m	0	
Con	pound	Initia	ıl Calib.	l	Cont	inuing	Calibr	ecion2	
	L	True Value	Found	XR	True Value	Found	<u> </u>	Found	ZR   Method 4
1.	Aluminum								
2.	Ancimony	1							11
3.	Arsenic								<u> </u>
4.	Barium				1.00	0.99	99		11 /
5.	Beryllium								
6.	Cadmium		-		1.00	1.00	100		11 /
7.	Calcium								11 :
8.	Chromium				1,00	0.98	98		11 P
9.	Cobalt		1						[]
10.	Copper		1						[1
11.	Iron	<u> </u>							. 11
12.	Lead				1				11
13.	Magnesium								.
14.	Manganese								11
15.	Mercury								<u>iii</u>
16.	Nickel	<u> </u>							:
17.	Potassium								
18.	Selenium								1
19.	Silver				1.60	0.99	99		11 9
20.	Sodium						<u> </u>		
21.	Thallium								
22.	Tin								
23.	Vanadium								
24.	Zinc								
Othe	e:								
		<u> </u>							
Cyan	ide								

THE TRANSPORT OF THE PROPERTY

l Initial Calibration Source 2 Continuing Calibration Source

<sup>3</sup> Control Limits: Mercury and Tin. 80-120; All Other Compounds 90-110

<sup>4</sup> Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

#### Form III

Q. C. Report No.

BLANKS

	0 .	פרטוועה			$\Omega$	
LAB NAME	Radian			CASE NO.	Mart 4	
DATE	2-27-86			UNITS	ug /ml	
		Marris	400			

	Initial	Cont	inuing Ca	libratio	מ		
Preparation	Calibration	11	Blank V	Preparat	Preparation Blank		
Compound	Blank Value	1	2	3	4	1	2
Metals:							j
l. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium	< ,001	(.001	0.001+	<.001		0.001*	1.001
5. Beryllium							
6. Cadmium	1.002	1.002	<.002	(002		1.002	<.002
7. Calcium							
8. Chromium	4.005	1.005	<.005	< 005		1.005	1.005
9. Cobalt							
10. Capper							1
li. Iron							
12. Lead				-			
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver	4.002	0.013	0,008*	1.002		115.002	1 < .002
20. Sodium							
21. Thallium					_		
22. Tin							
23. Vanadium							
24. Zine							
Other:							
				1			
Cyanide						11	;

\* Value is < 5 x 10L

# Organics PA19C

# Work order: 8601205

#### Volatile Organics

#### DETECTION LIMITS

			1
нетнор		1	(ETHOD
		I	ETECTION
,		1	IMIT
COMPOUND	-04-05	-06	-07,-08 -11=-13
Chloromethane	1.0	- 1,0	1.0
Bromomethane	14.75	4.75	14.75
Vinyl Chloride	2,25	2.25	2.25
Chloroethane	6.5	6.5	6.5
Methylene Chloride	3.125	3,125	3.125
Trichlorofluoromethane	1.25	1,25	1,25
l,l-Dichloroethene	1.625	1.625	1.625
l,1-Dichloroethane	0.875	0.875	0.875
Trans-1,2-Dichloroethene	1,25	1,25	1.25
Chloroform	2,75	0.625	0.025
1,2-Dichloroetbane	0.375	0,375	0.375
l,l,l-Trichloroethane	0.375	0.375	0.375
Carbon Tetrachloride	1,5	1.5	1.5
Bromodichloromethane	1,25	1.25	1,25
1,2-Dichloropropane	0.5	0,5	0.5
Trichloroethene	1.5	1.5	263
Dibromochloromethane	1.125	1,125	1.125
2-Chloroethylvinyl Ether	1.625	1.625	1.600
Brcmoform	0.5	ಎ.5	2.5
Tetrachloroethene	1.63	0.375	2.13
Chlorobenzene	3,125	3.195	3.125
l,3-Dichlorobeazene	4.0	4.0	4.0
,2-Dichlorobenzene	1875	1,875	
1,4-Dichlorobenzene	3.0	3.0	3.0

Sessed Bedding Contained Research Bedesical Beddings Research Research Beddings Research Beddings Beddings Research

# Work ader: 8601305

DETECTION LIMITS

VOLATILE ORGANICS
METHOD & COLO

OUND  OUND  DETECTION LIMIT US/bg	25.0	189	25.0	35.0	34,5	50,0		35.0		YLENE 35.0 124	
COMPOUND	BENZENE	TOLUENE	ETHYLBENZENE	CHLOROBENZENE	1,4-DICHLOROBENZENE	1,3-DICHLOROBENZENE	1,2-DICHLOROBENZENE	P-X-KENE	M-XYLENE	O-XYLENE	

LAB #	YSTO- BLANK		
CLIENT NAME			
SAMPLE ID			
EPA METHOD 601	DATE: ANALYST: INSTRUMENT:	EPA METHOD 602	DATE: (13/61 ANALYST: IS 6 INSTRUMENT: O.
COMPOUND	CONCENTRATION (ug/L)	COMPOUND	CONCENTRATION (ug/L)
Chloromethane		Benzene	- No
Bromomethane		Toluene	
Vinyl Chloride		Ethyl benzene	
Chloroethane		Chlorobenzene	
Methylene chloride		1.4-Dichlorobenzene	
Trichlorofluromethane		1.3-Dichlorobenzene	
1.1-Dichlorethene		1.2-Dichlorobenzene	
1.1-Dichlorethane		P-Xylene	
Trans-1.2-Dichloroethe	ne	M-Xylene	
Chloroform		0-Xylene	
1.2-Dichlorethane		1	
1.1.1-Trichlorethane		4	
Carbon tetrachloride		4	,
Bromodichlormethane -		4	
1.2-Dichloropropane		SURROGATE RECOVER	IES:
Trans-1.3-Dichloropror		601	•
Trichloroethene		Bromochloromethan	
Dibromochloromethane		2-Bromo-1-Chlorop	
1.1.2-Trichlorethane		1,4-Dichlorobutan	e
cis-1.3-Dichloroproper		602	1
2-Chloroethylvinyl eth	ner	a,a,a,-Trifluorot	oluene
Bromoform		-	
1.1.2.2-Tetrachloretha		-	
<u>Tetrachlorethylene</u>		-	
Chlorobenzene		1	
1.3-Dichlorobenzene		+	
1.2-Dichlorobenzene		-	
1.4-Dichlorobenzene		-	

BARRARI PLOCULUS ROCCOCOCO PERSONANT PRESENTATIONS SONO PERSONANT RESISTANT PROCESSO

LAB #	NAKENT BLAN	14 - TG 1:50				
CLIENT NAME						
SAMPLE ID						
	**********					
EPA METHOD	DATE:	EPA METHOD	DATE: (3) LEC			
601	ANALYST:	602	ANALYST: LINSTRUMENT: LO			
	INSTRUMENT:		instrument:QQ			
COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION			
<del></del>	(ug/L)		(ug/L)			
Chloromethane		Benzene	- 0.81			
Bromomethane		Toluene	6.64			
Vinvl Chloride		Ethyl benzene	1.09			
Chloroethane		Chlorobenzene				
Methylene chloride		1,4-Dichlorobenzene	` <u> </u>			
Trichlorofluromethane		1.3-Dichlorobenzene				
1.1-Dichlorethene		1,2-Dichlorobenzene	<u> </u>			
1.1-Dichlorethane		P-Xvlene	0.89			
Trans-1.2-Dichloroeth		M-Xylene	1.34			
Chloroform		0-Xylene	0.99			
1 0 0' 11						
1.1.1-Trichlorethane		1				
Carbon tetrachloride	· —					
Bromodichlormethane -		]				
1.2-Dichloropropane		SURROGATE RECOVER	RIES:			
Trans-1.3-Dichloropro		601				
Trichloroethene	•	Bromochloromethane				
Dibromochloromethane		2-Bromo-1-Chlorop	ropane			
1.1.2-Trichlorethane		l,4-Dichlorobutar	ne			
cis-1.3-Dichloroprope	ne	602				
2-Chloroethylvinyl et		a,a,a,-Trifluorot	oluene			
Bromoform						
1.1.2.2-Tetrachloreth	ane	1				
Tetrachlorethylene		1				
Chlorobenzene						
1.3-Dichlorobenzene						
1.2-Dichlorobenzene		_				
1.4-Dichlorobenzene						
1						
1						

LAB # SYST	Tom Blank		
CLIENT NAME			
SAMPLE ID			
		*******	
EPA METHOD 601	DATE: ANALYST: INSTRUMENT:	EPA METHOD 602	DATE: 1/30/86 ANALYST: CO INSTRUMENT Of
COMPOUND	CONCENTRATION (ug/L)	COMPOUND	CONCENTRATION (ug/L)
Chloromethane		Benzene	No
Bromomethane		Toluene	
Vinyl Chloride		Ethyl benzene	
Chloroethane		Chlorobenzene	
Methylene chloride		1.4-Dichlorobenzene	
Trichlorofluromethane		1.3-Dichlorobenzene	
1.1-Dichlorethene		1.2-Dichlorobenzene	
1.1-Dichlorethane	<del> </del>	P-Xylene	
Trans-1.2-Dichloroether	1e	M-Xylene	
Chloroform -		0-Xylene	U
1.2-Dichlorethane			
1.1.1-Trichlorethane			
Carbon tetrachloride			
Bromodichlormethane			
1.2-Dichloropropane		SURROGATE RECOVERI	ES:
Trans-1.3-Dichloroprope	ene	601	
Trichloroethene		Bromochloromethane	
Dibromochloromethane		2-Bromo-1-Chloropr	
1.1.2-Trichlorethane		l,4-Dichlorobutane	· · · · · · · · · · · · · · · · · · ·
cis-1.3-Dichloropropens	<u> </u>	602	•
2-Chloroethylvinyl ethe	er	a,a,a,-Trifluoroto	luene
Bromoform			
1.1.2.2-Tetrachlorethan	1e		
Tetrachlorethylene			
Chlorobenzene			
1.3-Dichlorobenzene			
1Dichlorobenzene		  -	
1.4-Dichlorobenzene		_}	

MERRENT BUNK	TG 1:50	
DATE: ANALYST: INSTRUMENT:	EPA METHOD 602	DATE: المحادل ANALYST: ح INSTRUMENT: O
CONCENTRATION (ug/L)	COMPOUND	CONCENTRATION (ug/L)
	Benzene	
	Toluene	5.45
	Chlorobenzene	
· · · · · · · · · · · · · · · · · · ·	1.4-Dichlorobenzene	
	1.3-Dichlorobenzene	·
	1.2-Dichlorobenzene	
· · · · · · · · · · · · · · · · · · ·	P-Xylene	
ethene	M-Xylene	
<del></del>	0-Xylene	
ne de e e propene ne ne opene ether ethane	SURROGATE RECOVER 601 Bromochloromethan 2-Bromo-1-Chlorop 1,4-Dichlorobutan 602 a,a,a,-Trifluorot	ropane
	DATE: ANALYST: INSTRUMENT:  CONCENTRATION (ug/L)  Ane  Chene  ATE: ANALYST: INSTRUMENT:  CONCENTRATION (ug/L)  Benzene Toluene Ethyl benzene Chlorobenzene 1.4-Dichlorobenzene 1.2-Dichlorobenzene 1.2-Dichlorobenzene P-Xylene M-Xylene O-Xylene  SURROGATE RECOVER Dene Dene Dene Ether O-Xylene  3.4-Dichlorobutan 602 a,a,a,-Trifluorot ethane	

EPA METHOD 601	DATE: ANALY: INSTRI	1/24 bl ST: JSG UMENT: SU	EPA METHOD 602	DATE: ANALYST: INSTRUMENT:			
COMPOUND		NTRATION g/L)	COMPOUND	CONCENTRATION (ug/L)			
Chloromethane	Λ	17	Benzene				
Bromomethane		<b></b>	Toluene				
Vinyl Chloride			Ethyl benzene				
Chloroethane			Chlorobenzene				
Methylene chloride			1.4-Dichlorobenzene				
Trichlorofluromethane		ļ	1.3-Dichlorobenzene				
1.1-Dichlorethene		L	1,2-Dichlorobenzene				
1.1-Dichlorethane		<u> </u>	P-Xylene				
Trans-1.2-Dichloroethene		<u> </u>	M-Xylene				
Chloroform		<u> </u>	0-Xylene				
1.2-Dichlorethane			-				
1.1.1-Trichlorethane			4				
Carbon tetrachloride			4				
Bromodichlormethane							
1.2-Dichloropropane			SURROGATE RECOVERIES:				
Trans-1.3-Dichloroproper	e		601				
Trichloroethene		<del></del>	Bromochloromethane				
Dibromochloromethane			2-Bromo-1-Chloropropane 1,4-Dichlorobutane				
1.1.2-Trichlorethane				e			
cis-1.3-Dichloropropene			602 a,a,a,-Trifluorot				
2-Chloroethylvinyl ether	<del></del>		a,a,a,-iriiiuorot	ordene			
Bromoform			4				
1.1.2.2-Tetrachlorethane	<del></del>		1				
Tetrachlorethylene			1				
Chlorobenzene 1.3-Dichlorobenzene			1				
1.2-Dichlorobenzene			1				
	<del></del>	<del></del>	1				
1.4-Dichlorobenzene			-				

LAB #N CANCE	INT BLANK - M	coff	1:5	
CLIENT NAME				
SAMPLE ID				
*********	**********		222222222222	*****
EPA METHOD 601	DATE: / 2466 ANALYST: 4 INSTRUMENT: Ju		EPA METHOD 602	DATE: ANALYST: INSTRUMENT:
COMPOUND	CONCENTRATION (ug/L)		COMPOUND	CONCENTRATION (ug/L)
Chloromethane		Benzen	e	
Bromomethane		Toluen		
Vinyl Chloride			benzene	
Chloroethane			benzene	
Methylene chloride			chlorobenzene	
Trichlorofluromethane		1,3-Di	chlorobenzene	
1.1-Dichlorethene			chlorobenzene	
1.1-Dichlorethane			ne	
Trans-1.2-Dichloroethene		M-Xyle		
Chloroform -		0-Xyle		
1.2-Dichlorethane				
1.1.1-Trichlorethane				
Carbon tetrachloride				
Bromodichlormethane				
1.2-Dichloropropane		SURR	OGATE RECOVER	IES:
Trans-1.3-Dichloropropen		601		
Trichloroethene	0:13	Brom	ochloromethane	·
Dibromochloromethane		2-Br	omo-1-Chloropi	ropane
1.1.2-Trichlorethane		1,4-	Dichlorobutane	9
cis-1.3-Dichloropropene		602		
2-Chloroethylvinyl ether		a,a,	a,-Trifluoroto	oluene
Bromoform		1		
1.1.2.2-Tetrachlorethane	3017	1		
<u>Tetrachlorethylene</u>	<del></del>	1		
Chlorobenzene		1		
1.3-Dichlorobenzene	<del></del>	1		
1.2-Dichlorobenzene		]		
1.4-Dichlorobenzene				

LAB # SYSTE	BLANK		<del></del>	
CLIENT NAME				
SAMPLE ID				
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EPA METHOD	DATE:( )	126	EPA METHOD	DATE:
601	ANALYST:	756		ANALYST:
	INSTRUMEN	IT: H		INSTRUMENT:
		<u> </u>	mus-	
COMPOUND	CONCENTRA	ATION	COMPOUND	CONCENTRATION
	(ug/L)	)	-	(ug/L)
			<del></del>	
Chloromethane	$\wedge$	2	Benzene	
Bromomethane			Toluene	
Vinvl Chloride			Ethyl benzene	
Chloroethane			Chlorobenzene	
Methylene chloride			1,4-Dichlorobenzene	
Trichlorofluromethane			1.3-Dichlorobenzene	
1.1-Dichlorethene			1.2-Dichlorobenzene	
1.1-Dichlorethane			P-Xylene	
Trans-1.2-Dichloroethene			M-Xylene	
Chloroform -			0-Xylene	
1.2-Dichlorethane				
1.1.1-Trichlorethane				
Carbon tetrachloride			1	
Bromodichlormethane			1	
1.2-Dichloropropane			SURROGATE RECOVERI	ES:
Trans-1.3-Dichloropropen	<u> </u>		601	
Trichloroethene			Bromochloromethane	
Dibromochloromethane			2-Bromo-1-Chloropr	
1.1.2-Trichlorethane			l,4-Dichlorobutane	
cis-1.3-Dichloropropene			602	
2-Chloroethylvinyl ether			a,a,a,-Trifluoroto	luene
Bromoform			4	
1.1.2.2-Tetrachlorethane			<del> </del>	
<u>Tetrachlorethylene</u>			4	
Chlorobenzene			4	
1.3-Dichlorobenzene			_	
1.2-Dichlorobenzene	<del>- \</del>		-	
1.4-Dichlorobenzene	<u> </u>		-	
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LAB # ASA6	EM BLANK -	Mrot 1:5	
CLIENT NAME			
SAMPLE ID			
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EPA METHOD	DATE: 1 72 5	EPA METHOD	DATE:
601	ANALYST: C	602	ANALYST:
	INSTRUMENT 24		INSTRUMENT:
<del></del>			
COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
	(ug/L)		(ug/L)
		·	
Chloromethane		Benzene	
Bromomethane		Toluene	
Vinvl Chloride		Ethyl benzene	
Chloroethane		Chlorobenzene	
Methylene chloride		1.4-Dichlorobenzene	
Trichlorofluromethane		1.3-Dichlorobenzene	
1.1-Dichlorethene		1.2-Dichlorobenzene	
1.1-Dichlorethane		P-Xylene	
Trans-1.2-Dichloroether	ne	M-Xylene	
Chloroform -	0.32	0-Xylene	
1.2-Dichlorethane		4	
1.1.1-Trichlorethane		4	
Carbon tetrachloride		4	
<u>Bromodichlormethane</u>		4	
1.2-Dichloropropane		SURROGATE RECOVER	IES:
Trans-1.3-Dichloroprope		601	
Trichloroethene		Bromochloromethan	
<u>Dibromochloromethane</u>		2-Brome-1-Chlorop	ropane
1.1.2-Trichlorethane		1,4-Dichlorobutan	e
cis-1.3-Dichloropropens		602	.*
2-Chloroethylvinyl ethe	er	a,a,a,-Trifluorot	oluene
Bromoform		+	
1.1.2.2-Tetrachlorethan	<del>™{ 0.+3</del>	1	
Tetrachlorethylene Chlorobene		1	
Chlorobenzene 1.3-Dichlorobenzene	<del></del>	1	
1.2-Dichlorobenzene		†	
1.4-Dichlorobenzene		7	
TA-SICHTOLODENZERE		-	

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LAB # SYSTO	- GLANK		······································	
CLIENT NAME				
SAMPLE ID				
***********			****	******
601	DATE: [محر] ANALYST: ז INSTRUMEN	36	EPA METHOD 602	DATE: ANALYST: INSTRUMENT:
COMPOUND	CONCENTRA'	TION	COMPOUND	CONCENTRATION (ug/L)
Chloromethane		<u>ر</u>	Benzene	
Bromomethane		1	Toluene	
Vinyl Chloride		1	Ethyl benzene	
Chloroethane			Chlorobenzene	
Methylene chloride			1.4-Dichlorobenzene	
Trichlorofluromethane		<u> </u>	1.3-Dichlorobenzene	
1.1-Dichlorethene		<u> </u>	1.2-Dichlorobenzene	
1.1-Dichlorethane		<u> </u>	P-Xylene	
Trans-1.2-Dichloroethene		<u> </u>	M-Xylene	
Chloroform			0-Xylene	
1.2-Dichlorethane				
1.1.1-Trichlorethane			]	
Carbon tetrachloride				
Bromodichlormethane				
1.2-Dichloropropage			SURROGATE RECOVER	TES:
Trans-1.3-Dichloropropene			601	
Trichloroethene			Browochloromethane	·
Dibromochloromethane			2-Bromo-1-Chloropi	ropane
1.1.2-Trichlorethane			1,4-Dichlorobutane	·
cis-1.3-Dichloropropene			602	••
2-Chloroethylvinyl ether			a,a,a,-Trifluoroto	oluene
Bromoform			j	
1.1.2.2-Tetrachlorethane			]	
Tetrachlorethylene			]	
Chlorobenzene			_	
1.3-Dichlorobenzene			_	
1.2-Dichlorobenzene	N/			
1.4-Dichlorobenzene				

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LAB #	1 streat	MARCA	- not 1:5	-
CLIENT NAME	/			
SAMPLE ID				
	2222222		***********	
EPA METHOD 601	DATE:   ?	: NP	EPA METHOD 602	DATE: ANALYST: INSTRUMENT:
COMPOUND	CONCENT	RATION	COMPOUND	CONCENTRATION (ug/L)
Chloromethane	^	12	Benzene	
Bromomethane		L	Toluene	
Vinyl Chloride			Ethyl benzene	
Chloroethane			Chlorobenzene	
Methylene chloride			1.4-Dichlorobenzene	
Trichlorofluromethane			1.3-Dichlorobenzene	
1.1-Dichlorethene			1.2-Dichlorobenzene	
1.1-Dichlorethane			P-Xvlene	
Trans-1.2-Dichloroethene	1		M-Xvlene	
Chloroform '-			0-Xylene	
1.2-Dichlorethane				
1.1.1-Trichlorethane				
Carbon tetrachloride				
Bromodichlormethane				
1.2-Dichloropropane			SURROGATE RECOVER	RIES:
Trans-1.3-Dichloropropen	e		601	
Trichloroethene			Bromochloromethan	ie
Dibromochloromethane			2-Brome-1-Chlorop	propane
1.1.2-Trichlorethane			1,4-Dichlorobutan	
cis-1.3-Dichloropropene			602	
2-Chloroethylvinyl ether			a,a,a,-Trifluorot	oluene
Bromoform				
1.1.2.2-Tetrachlorethane				
Tetrachlorethylene				
Chlorobenzene				
1.3-Dichlorobenzene				
1.2-Dichlorobenzene				
1.4-Dichlorobenzene	V			

## DAILY QUALITY CONTROL

## EPA DC WP 483 CINC 2 + 6PA DC WP 781 CMC 3

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1/28/86	E E	6	6
	CENTIFIED VALUE (MS/L)	ANALYZED WALUE	Bre
Chloromethane			
Bromomethane			
Vinyl chloride			<u> </u>
Chloroethane	<u> </u>		
Methylene chloride	9.2	2.7	95
Trichlorofluoromethane		-	
1,1-Dichloroethene	10.0	8.6	86
1,1-Dichloroethane			
trans-1,2-Dichloroethene	5.4		
Chloroform	43.0	55.7	130
1,2-Dichloroethane	27.6	24.6	89
1,1,1-Trichloroethane	14.3	14.7	103
Carbon tetrachloride	200	19.5	97
Bromodichloromethane	7.9	8.7	111
1,2-Dichloropropane	8.0	8.2	102
Trichloroethene	22.2-	20.1	103
Dibromochloromethane	16.7	15.0	90
1,1,2-Trichloroethane		<del> </del>	<del> </del>
cis-1,3-Dichloropropene			<del> </del>
2-Chloroethylvinyl ether Bromoform	5.9	10,6	107
1.1.2.2-Tetrachloroethane	10.0		
Tetrachloroethylene	6.2		
Chlorobenzene	8.7	7.8	96
1,3-Dichlorobenzene	· ·		
1,2-Dichlorobenzere			
1,4-Dichlorobenzene			

## DAILY BUALITY CONTROL

EPA DC WP 483 cmc 2 + 5PA DC WP 781 cmc 3

12/30	CENTIFIED VALUE (MS/L)	G B ANALYZED WILLE	G/B Bræ
Chloromethane			
Bromomethane			
Vinyl chloride			
Chloroethane			
Methylene chloride	9.2	12.4 10.1	102/110
Trichlorofluoromethane			
1,1-Dichloroethene	10.0	9.0/10.2	90 /102
1,1-Dichloroethane		1	
trans-1,2-Dichloroethene	5.4		
Chloroform	43.0	1511/57.5	151 134
1,2-Dichloroethane	27.6	25.5/05.8	92/94
1,1,1-Trichloroethane	14.3	15.9 16,2	111 /113
Carbon tetrachloride	20.0	21.1/20.2	105/111
Bromodichloromethane	7.9	8.7 /3.2	110/104
1,2-Dichloropropane	8.0	7.9 12.2	99 /102
Trichloroethene	22.2	24.5 /22.4	110 /103
Dibromochloromethane	16.7	15.2/16.2	91 197
1,1,2-Trichloroethane			
cis-1,3-Dichloropropene			
2-Chloroethylvinyl ether	CC	11.3 19.7	114 97
Bromoform	9.9	11. 3 [7.1]	111
1.1.2.2-Tetrachloroethane Tetrachloroethvlene	6.2		
Chlorobenzene	8.7	10.5 9.1	193 110
1,3-Dichlorobenzene		1	<del>                                     </del>
1,2-Dichlorobenzene			
1,4-Dichlorobenzene			

# DAILY QUALITY CONTROL RAS GC LAB

DATE:	1/30/36		SPIKED VALUE (ug/L)	ANA	LYZED V. (ug/L)	ALUE		% RECOVER	Ŷ
		INSTRUMENT		D			D		
		ANALYST		a			9		
TEST	COMPOUN	D .			<del></del>		+		====
METHOD		···							
EPA 601	Chloromethane	<del></del>	16.2						
	Chloroethane		28.1						
	Methylene Chlorid	e	26.3				<u> </u>	ļ	
	1,1-Dichloroethyl	ene	45.0					ļ	
	Trans-1,2-Dichlor	oethylene_	12.5						
	Carbon Tetrachlor	ide	60.0						
	Dichlorobromometh	ane	40.0	<u> </u>			ļ		ļ
	1,1,2-Trichloroet	hane	33.8	ļ			<del> </del>	<u> </u>	
EPA 602	Benzene		30.7	33.5			109		
	Toluene		4.1	4.4			107	ļ	
	Ethylbenzene		11.5	11-3			99		
	P-Xylene		19.1	30.5	ļ		108		
	M-Xylene		42.6	45,0			106		
	O-Xylene		10.6	10.5			99		
EPA 608			(ug/g)		(ug/g)				
}	Aroclor 1242		58.7				ļ		
L	Aroclor 1260		56.8				<u> </u>		

## DAILY QUALITY CONTROL

# EPA DE WP 483 CINC 2 + EPA DE WP 781 CAL 3

Chloromethane Bromomethane Winyl chloride Chloroethane Methylene chloride Trichlorofluoromethane 1,1-Dichloroethane 1,1-Dichloroethane trans-1,2-Dichloroethane 1,2-Dichloroethane 1,1-Trichloroethane 1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,2-Dichloropropane 1,2-Dichloropropane 1,2-Dichloropropane 1,2-Dichloropropane 1,2-Dichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1,2-Trichloropropane 2-Chloroethylvinyl ether Bromoform 1,1,2-Trichloropropane 2-Chloroethylvinyl ether Bromoform 1,1,2-Trichloroethane 1,1,2-Trichloropropane 2-Chloroethylvinyl ether Bromoform 1,1,2-Trichloropropane 2-Chloroethylvinyl ether Bromoform 1,1,2-Trichloropropane 2-Chloroethylvinyl ether Bromoform 1,1,2-Trichloropropane 2-Chloroethylvinyl ether Bromoform 1,1,2-Trichloropropane 2-Chloroethylvinyl ether Bromoform 1,1,2-Trichloropropane 2-Chlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,2-Dichlorobenzene	(/20/36		6 (0	c/0
Bromomethane   Viny1 chloride   Chloroethane   Chloroethane   Chloroethane   Chloroethane   Chloroethane   Chlorofluoromethane   Chloroethane			6/0 2nec	
Vinyl chloride   Chloroethane   Chloroethane   Chloroethane   Chloroethane   Chlorofluoromethane   Chlorofluoromethane   Chloroethane   Chlorofluoromethane   Chloroethane   hloromethane				
Chloroethane	Bromomethane			
Methylene chloride         9.2         9.6 8.9         10.7<	Vinyl chloride			
Trichlorofluoromethane  1,1-Dichloroethene 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,2-Dichloropropane 1,2-Dichloropropane 1,2-Dichloropropane 1,2-Dichloropropane 1,2-Dichloropropane 1,2-Dichloropropane 1,1,2-Trichloroethane 1,2-Trichloroethane 1,2-Trichloroethane 1,2-Trichloropropane 2-Chloroethylvinv1 ether 3	Chloroethane		1	
1,1-Dichloroethane	Methylene chloride	9.2	9.6/9	104/103
1,1-Dichloroethane	Trichlorofluoromethane			,
Chloroform	1,1-Dichloroethene	10.0	8.8 817	88 /37
Chloroform	l,l-Dichloroethane			
1,2-Dichloroethane	trans-1,2-Dichloroethene	5.4		
1,1,1-Trichloroethane	Chloroform	43.0	USI 49,1	151/114
Carbon tetrachloride         20.0         20.4   3.5   102   73           Bromodichloromethane         7.9         8.8   8.2   111   103           1,2-Dichloropropane         8.0         8.4   7.1   104   101           Trichloroethene         22.2         24.2   20.3   139   92           Dibromochloromethane         16.7   15.5   16.6   93   102           1,1,2-Trichloroethane         16.7   15.5   16.6   93   102           2-Chloroethylvinvl ether         10.3   3.3   104   37           Bromoform         9.5         10.3   3.3   104   37           1,1,2,2-Tetrachloroethane         10.0   1	1,2-Dichloroethane	27.6	24.5/23.7	89 /36
Bromodichloromethane	1,1,1-Trichloroethane	14.3	14.6 3.7	N2 176
1.2-Dichloropropane  8.0 8.4 7.1 104 101 Trichloroethene  22.2 Dibromochloromethane 16.7 15.5 16.6 93 109 1.1.2-Trichloroethane cis-1,3-Dichloropropene 2-Chloroethylvinvl ether  Bromoform  9.9 1.1.2.2-Tetrachloroethane Tetrachloroethylene Chlorobenzene 1,3-Dichlorobenzene 1,2-Dichlorobenzene	Carbon tetrachloride	200	20.4 /13.5	102/93
Trichloroethene	Bromodichloromethane	7.9	8.8 18.2	111/103
Dibromochloromethane  1.1,2-Trichloroethane cis-1,3-Dichloropropene  2-Chloroethvlvinvl ether  Bromoform  1.1,2,2-Tetrachloroethane Tetrachloroethvlene  Chlorobenzene  1,3-Dichlorobenzene  1,2-Dichlorobenzene	1,2-Dichloropropane	8.0	8.4 R.1	104/101
1,1,2-Trichloroethane cis-1,3-Dichloropropene  2-Chloroethvlvinvl ether  Bromoform  1,1,2-Tetrachloroethane  1,2-Tetrachloroethane  Tetrachloroethvlene  Chlorobenzene  1,3-Dichlorobenzene  1,2-Dichlorobenzene	Trichloroethene	22.2	24.2/20.3	109/92
cis-1,3-Dichloropropene         2-Chloroethvlvinvl ether         Bromoform       9.9       10.3 3.3       10.4 3.7         1.1.2.2-Tetrachloroethane       10.0 </td <td>Dibromochloromethane</td> <td>16.7</td> <td>15.5 /16.6</td> <td>93 1100</td>	Dibromochloromethane	16.7	15.5 /16.6	93 1100
2-Chloroethylvinv1 ether  Bromoform  9.9  1.1.2.2-Tetrachloroethane Tetrachloroethylene  Chlorobenzene  1,3-Dichlorobenzene  1,2-Dichlorobenzene			, <u> </u>	/
2-Chloroethylvinv1 ether				
1.1.2.2-Tetrachloroethane       10.0         Tetrachloroethvlene       6.2         Chlorobenzene       8.2         1,3-Dichlorobenzene       10.6         1,2-Dichlorobenzene       10.6	2-Chloroethylvinyl ether	CC	107/22	104 /29
Tetrachloroethvlene  Chlorobenzene  1,3-Dichlorobenzene  1,2-Dichlorobenzene			10, > 13.3	10(13)
Chlorobenzene       8.2       10.6 3.1       13/99         1,3-Dichlorobenzene       1,2-Dichlorobenzene				
1,3-Dichlorobenzene 1,2-Dichlorobenzene		1	10.6 3.1	125/99
1,2-Dichlorobenzene		, v		
	1,4-Dichlorobenzene			

#### DAILY QUALITY CONTROL RAS GC LAB

DATE:	1/3/186		SPIKED VALUE (ug/L)	ANAI	YZED VALUE		z ecove
		NSTRUMENT NALYST		D 0		D	
TEST METHOD	COMPOUND	<del></del>		<u> </u>		7	<del></del>
EPA 601	Chloromethane		16.2				
	Chloroethane		28.1	<del></del>			- <del>-</del> -
-	Methylene Chloride		45.0				
	1,1-Dichloroethyle		1				
	Trans-1,2-Dichloro		12.5				
	Carbon Tetrachlor		60.0				
	Dichlorobromometha		40.0				
	1,1,2-Trichloroeth	nane	33.8				
EPA 602	Benzene		30.7	33.6		109	
	Toluene		4.1	4.0		97	
	Ethylbenzene	·	11.5	10.4		91	
}   	P-Xylene		19.1	18.9		99	
	M-Xylene		42.6	43.2		101	
	O-Xylene		10.6	8.7		172	
EPA 608			(ug/g)		(ug/g)		
	Aroclor 1242		58.7				
	Aroclor 1260	<del></del>	56.8				
			7	261			

Surrogate Recoveries
Lab#: 8601805-04B Sample ID: 86009 Date: 1-28-86 Instrument: G
601/8010 Bromochloromethane: 108%,120% 2-Bromo-1-Chloropropane: 99%,111%
a,a,a-Trifluorotoluene:

-	
	Surrogate Recoveries
	Lab#: 8601205-05B Sample ID: 860011
	Date: 1-28-86 Instrument: G
<del></del>	601/8010
-	Bromochloromethane: 109% 2-Bromo-1-Chloropropane: 96%
	602/802 a,a,a-Trifluorotoluene:

	Surrogate Recoveries	<u>.</u>
Sample_	8601205-06B ID:860012	
Date: 1-2 Instrum	30-86	-·- <del>-</del>
	10000000000000000000000000000000000000	
402/802 a,a,a-Tr	rifluorotoluene:	

Surrogate Recoveries	
Lab#: 8601205-07B Sample ID: 860013 Date: 1-29-86 Instrument: G	
a,a,a-Trifluorotoluene:	<del></del>

 Surrogate Recoveries	
Lab#: 8601205-08B Sample ID: 860014 Date: 1-29-86 Instrument: G	
601/8010 Bromochloromethane: 115% 2-Brcmc-1-Chloropropane: 117%	
 602/302 a,a,a-Trifluorotoluene:	

Surrogate Recoveries
Lab#: 8601205-11B Sample ID: 860022 Date: 1-29-86 Instrument: G
601/8010 Bromochloromethane: 1119/0 a-Bromo-1-Chloropropane: 1149%
a,a,a-Trifluorotoluene:

Surrogate Recoveries	
Lab#: 8601205-12B	an and the second secon
Sample ID: 860004	
Date: 1-29-86	
Instrument: G	
JASTIUMENT G	
101/000	
<u>601/8010</u>	
Bromochloromethane: 105%	
2-Bromo-1-Chloropropane: 119%	
<u>602/302</u>	
a,a,a-Trifluorotoluene:	

		· <del>-</del>		
-	=	Surro	yate Rec	ovenes
	Lab#: 860 Sample ID Date: 1-29-8 Instrumen	: 860005 :		
	601/8010 Bromochiona 2-Bromo-1			139%
	602/302 a.a.a-Trif	4uncotoli	lene.	

 Surrogate Recoveries
Lab#: 8601205-04B Sample ID: 860009 Date: 1-30-86 Instrument: D
601/8010 Bromochloromethane: 2-Bromo-1-Chloropropane:
 602/302 a,a,a-Trifluorotoluene: 103%

Surrogate Recoveries
Lab#: 8601205-05B Sample ID:860011 Date: 1-30-86 Instrument:D
601/8010 Bromochloromethane: 2-Bromo-1-Chloropropane:
602/802 a,a,a-Trifluorotoluene: 100%, 101%

Surrogate	Recoveries
` /	

Lab#: 8601205-00B Sample ID: 860012 Date: 1-30-86 Instrument:D

601/8010 Bromochloromethane: 2-Brcmc-1-Chloropropane:

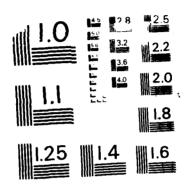
602/502 a,a,a-Trifluorotoluene: 94%

# Surrogate Recoveries Lab#: 8601805-07B Sample ID: 860013 Date: 1-20-86 Instrument: D 601/8010 Bromochloromethane: 2-Bromo-1-Chloropropane: 602/802 a,a,a-Trifluorotoluene: 9896

Surrogate Recoveries
Lab#:8001805-08B Sample ID:860014 Date: 1-30-86 Instrument:D
601/8010 Bromochloromethane: 2-Brcmc-1-Chloropropane:
 602/302 a.a.a-Trifluorotoluene: 103%

 • · · · • · · · · · · · · · · · · · · ·
Surrogate Recoveries
 Lab#: 8601205-11B Sample ID: 860022
 Date: 1-31-86 Instrument: D
601/8010 Bromochloromethane: 2-Brcmc-1-Chloropropane:
 602/302 a,a,a-Trifluorotoluene:103%

INSTALLATION RESTORATION PROGRAM PHASE 2
CONFIRMATION QUANTIFICATION STAG. (U) RADIAN CORP
AUSTIN TX DEC 87 F33615-83-D-4001 MO-R198 447 4/5 UNCLASSIFIED F/G 24/7 NL.



CONTRACTOR CONTRACTOR

MICROCOPY RESOLUTION TEST CHART
NAT DNAL BUREAU DE STANDARDS - 1965 "

	<del></del>
	Surrogate Recoveries
	Lab#:8601205-12B Sample ID:860004 Date: 1-31-86 Instrument:D
	601/8010 Bromochloromethane: 2-Bromo-1-Chloropropane:
<del> </del>	602/502 a,a,a-Trifluorotoluene: 105%

 <del></del>
 Surrogate Recoveries
Lab#:8001205-13B Sample ID:860005 Date: 1-31-80 Instrument:D
601/8010 Bromochloromethane: 2-Bromo-1-Chloropropane:
 602/S02 a,a,a-Trifluorotoluene: 110%

 <del></del>
 Surrogate Recoveries
 Lab#:8601205-14B
 Sample ID: 860019 Date: 1-31-86 Instrument: D
 601/8010
 Bromochloromethane:
2-Brcmc-1-Chloropropane: = 602/SC2
 a,a,a-Trifluorotoluene: 103%

 Surrogate Recoveries
Lab#: 3601205-15B Sample ID: 560001 Date: 1-31-86 Instrument: D
 ÷
 601/8010 Bromochloromethane: 2-Brcmc-1-Chloropropane:
 602/SCZ a,a,a-Trifluorotoluene: 110%
 ·-

# RADIAN

# SPIKE RECOVERY

EPA Method 602 Volatile Organics  SAMPLE # 860125-113 UNITS PLANTY	2.30 July 200 11,200						
СОМРОИЛО	SSR	SR	SA	ZR			
Benzene	40.3	NDP	30.7	131			
Toluene	3, L		4.1	201			
Ethyl benzene	14.6	-	11.5	127			
1,4-Dichlorobenzene							
1,3-Dichlorobenzene							
1,2-Dichlorobenzene							
0-Xylene	17.1		10.6	114			
M-Xylene	56.2	1 - / -	43.6	132			
P-Xylene	2514	1 1/	19.1	134			
Chlorobenzene							

A INTERFERENCES IN TE ALAGNOY SUBTANCED OUT

UT USR = Spiked Sample Result

SE 3 = Sample Result

LA = Spike Added

RADIAN

THE RESIDENCE OF THE PROPERTY

### SPIKE RECOVERY

EPA METHOD 601	86012 PLA	05 – 1 17 4	76		1)	22/86		
Volatile Organics	8601305 - 67B PRANT Y 860013 1.875-95-1 A 5			est c				
COMPOUNDS	SSR	SR	SA	<b>7</b> R	SSR	SR	SA	ZR.
Chloromethane								
Bromomethane		ļ	}					
Vinyl chloride								
Chloroethane								
Methylene chloride	7.4		9.2	81				
Trichlorofluoromethane								
l,1-Dichloroethene	9.1		10.0	91	-			
l,1-Dichloroethane								
trans-1,2-Dichloroethene	3.1		5.4	106				
Chloroform	43.5		43.0	101				
1,2-Dichloroethane	₩.		77.6	194				
1,1,1-Trichloroethane	15.8		14.3	110				
Carbon Tetrachloride	24.3		30.0	[9]				
Bromodichloroemethane	6.6		7.9	84				
1,2-Dichloropropane	810		8.0	ivo				
Trichloroethene	75.8		77.2					
Dibromochloromethane	13.6		14.7	81				
1,1,2-Trichloroethane								
cis-1,2-Dichloropropene								
2-Chlorethylvinyl ether								
Bromoform	8,0		9.9	81				
1,1,2,2-Tetrachloreothar	e		10.0					
Tetrachlorethylene			6.2					
Chlorobenzene	2,2		8.2	100				
1,3-Dichlorobenzene								
1,2-Dichlorobenzene								
1,4-Dichlorobenzene								

SSR = Spiked Sample Result

SR = Sample Result

SA = Spike Added

### **DUPLICATE ANALYSIS**

EPA Method 601 BOIO Volatile Organics 40 Ag						
COMPOUND	RUN#1	RUN#2	RPD	RUN#1	RUN#2	RPD
Chloromethane	du au		ಬರ			
Bromomethane						
Vinyl chloride				<del>-</del>		
Chloroethane						
Methylene chloride						
Trichlorofluoromethane						
1,1-Dichloroethene	<del></del>		<del>                                      </del>			
l,1-Dichloroethane						
trans-1,2-Dichloroethene		<del>                                     </del>	<del>  </del>			
Chloroform			<del>                                     </del>			
1,2-Dichloroethane		<del>                                     </del>	<del>                                     </del>			
1,1,1-Trichloroethane		<del>                                     </del>	<del>                                     </del>	<u> </u>		
Carbon Tetrachloride		<del>                                     </del>				
Bromodichloroemethane		<del>                                     </del>	<del>                                     </del>			
1,2-Dichloropropane		<del>                                      </del>				
Trichloroethene		<del>                                     </del>				
Dibromochloromethane		<del>                                     </del>	<del>                                     </del>			
1,1,2-Trichloroethane		<del>                                     </del>				
cis-1,2-Dichloropropene		<del>                                     </del>				
2-Chloroethylvinyl ether			<del>  </del>			
Bromoform						
1,1,2,2-Tetrachloreotbane			<del>                                     </del>			
Tetrachlorethylene						_
Chlorobenzene			<del>                                     </del>			
1,3-Dichlorobenzene		1				
1,2-Dichlorobenzene	<del>                                      </del>		<del>                                     </del>			
1,4-Dichlorobenzene	<b>V</b>	•	<b>*</b>			
**************************************			*********			

 $RPD = \frac{|R_1 - R_2|}{(R_1 + R_2)/2} \times 100$ 

RPD= Relative Percent Difference

Commence of the Commence of th

DUPLICATE ANALYSIS

	Sample	D: 860011	
EPA METHOD 602 8020	•		
VOLATILE ORGANICS			
SAMPLE # 8401205-05	B		
UNITS 119/18		2	=
Compound	RUN#1	RUN#2	RPD
Benzene			140
Toluene	ND	ND	NC.
			<del></del>
Ethyl benzene			
1,4-Dichlorobenzene			
1,3-Dichlorobenzene			
1,2-Dichlorobenzene			
0-Xylene			
M-Xylene			
P-Xylene			
Chlorobenzene	4	•	•

$$RPD = \frac{|R_1 - R_2|}{(R_1 + R_2)/2} \times 100$$

RPD= Relative Percent Difference

						• ,		•			UNITS	1600	2/07	49 Jal ou 49/9
	PLANT 4	80-10-98	305 1213		metele	415/04	14 15 ( Dil and great	(8)			ı	ò		0:0
ELEMENT	ANALYSIS DATE	QC DATA	ATA		DOL	LICATE	DUPLICATE ANALYSIS	S		SPI	SPIKE REC	RECOVERY		BLANKS
		FOUND VALUE	TRUE VALUE	<b>%</b> R	SAMP,"	SAMP	DUPL	RPD	SAMP#	SR	SSR	SA	<b>%</b>	
*	18-45-6	0.98	1.00	86	dup bip	1.3 ug/a	7.5 ug/a	7.E						col bl <.005
	200'= P'	0.98	7.00	98					an sp (3A	.036	46.	1.00	90	prepol 2,005
														cal 61 <,005
						·								
Oil and Grease	2-14-86	197	200	66										
	1 = 101	-												
	1													
									·					1
84														

W.O. 86-01-205, 206



ELLICATE PERSONAL PROPERTY PLANSAGE

### **CHAIN OF CUSTODY RECORD**

Field Sample No. 3 860001 -> 8600 23

Company Sampled / AddressA/R _ A	FORCE PLANT 4	
	-> HM-106 AND SB-1-> SB	
Stream Characteristics: NA	· · · · · · · · · · · · · · · · · · ·	•
Temperature	Flow	pH
Visual Observations/Comments		
Collector's Name PETER A WA	TERREUS Date/Time Sampled 1/2	120/86 - 1/26/86
Amount of Sample Collected <u>23</u>	10°C × Other 0°C	VOAS
Sample Description 5011		
Store at: ☐ Ambient ☐ 5°C ☐ —	10°C ≥ Other _ D°C	
Caution · No more sample available	☐ Return unused portion of sample ☐	Discard unused portions
	Hazards <u>NOTE ALL SAMPL</u>	
Other instructions - Special Handling -	TP-4	$ES \left( SB-1 \rightarrow SB-4 \right)$
producy save sull	(\$P-9)	
		<del></del>
☐ Hazardous sample (see below)	□ Non-hazardous	s sample
□ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C)
☐ Pyrophoric	☐ Lachrymator	□ Shock sensitive
□ Acidic	☐ Biological	☐ Carcinogenic - suspect
□ Caustic	□ Peroxide	☐ Radioactive
Other		
Sample Allocation/Chain of Possession	nn.	
Organization Name RAS -		
Received By WWW TWWWW	Date Received	88-86 Time 1330
Transported By PW	Lab Sample No. 4601du	
Comments	36C019 4 86C	2021 (3 VOA 0) to
Inclusive Dates of Possession	GC la	
Organization Name		
	Date Received	
	Lab Sample No.	
	Date Received	
	Lab Sample No.	
	•	

W.O. 86-01-206 samples 01-08 ICPES DATA 94/9C

Form II - PA /
Q. C. Report No. #3

# INITIAL AND CONTINUING CALIBRATION VERIFICATION<sup>3</sup>

KANAMATAN MANAMATAN M

LAB	NAME _	adian			CASE	NO	Place	nt 4		
					SOU N	ю				
DATE	3-	26-86			UNIIS		2/0	2		
		Initia				100100	Calib:	estion <sup>2</sup>		
Heta	us:	True Value	Found	<u> </u>	True Value	Found	<u> </u>	Found	<u>=</u>	Method 4
1.	Aluminum						<u> </u>			
2.	Antimony				j	-				
3.	Arsenic					·				
4.	Barium	1.00	0.99	99	1.00	0.96	196	0,97	1971	P
5.	Beryllium								11	
6.	Cadmium	1.00	0.96	96	1.00	1.01	101	1.01	1011	IP
7.	Calcium									1
8.	Chromius	1.00	0.96	96	1.00	0.99	199	1.00	1001	P
9.	Cobalt								}	
10.	Copper								1	
11.	Iron									
12.	Lead									1
13.	Magnesium									
14.	Manganese						,			
15.	Mercury									
16.	Nickel									i
17.	Potassium									
18.	Selenium									(
19.	Silver	1.00	0.98	98	1.00	1.03	103	1.03	103	P
20.	Sodium									
21.	Thallium									
22.	Tin									
23.	Vanadium									
24.	Zinc									
Other	:									
Cyani	de									

<sup>1</sup> Initial Calibration Source 2 Continuing Calibration Source

<sup>3</sup> Control Limits: Mercury and Tin. 80-120; All Other Compounds 90-110

<sup>4</sup> Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

W.O. 86-01-206 samples 01-08 ICPES DATA

Form II -Pg 3

Q. C. Report No. #3

### INITIAL AND CONTINUING CALIBRATION VERIFICATION3

LAB	NAME	Zadian			CASE	NO. 6	Pla	nt 4	
					SOU N				
DAT	E	3-26-86	·		UNITS	<u> </u>	In	1	
		Inicia		1	Cont		alibe	ation <sup>2</sup>	
		True Value	Found	222	True Value	Found	<u> 32</u>	Found	ZR Method 4
1.	Aluminum								
2.	Antimony					-			11
	Arsenic								il
	Barium				1.00	0.99	99		II P
	Beryllium								
6.	Cadmium				1.00	1.07	107		IIP
7.	Calcium								
8.	Circuius				1,00	1.00	100		II P
9.	Cobalt								
10.	Copper								
11.	Iron	<u>i</u>	İ						
12.	Lead								
13.	Magnesius								
14.	Manganese	÷							
15.	Mercury								11
16.	Nickel								İ
17.	Potassium	R							1 11
18.	Selenium								1 11
19.	Silver				1.00	1.03	103		I P
20.	Sodium								1 11
21.	Thallium								1 11
22.	Tin								
23.	Vanadium								
24.	Zine								
	r:								
Cyan	ide								

<sup>1</sup> Initial Calibration Source 2 Continuing Calibration Source

<sup>3</sup> Control Limits: Mercury and Tin. 80-120; All Other Compounds 90-110

<sup>4</sup> Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

W.O. 86-01-206 pamples 01-08 ICPES DATA

Q. C. Report No. Olant 4

LAB NAME Q	rdian	BL.	anks	(	CASE NO	. <i>9</i>	land L	4	
DATE	10-86	Mac	rix	τ	NITS _		g Imp		
Preparation	Initial Calibration	Cont	inuing C		on		Prepara	cion Blar	ık
Compound	Blank Value	1	2	3	4		1	2	
Mecals:									-

Cor	mound	Blank Value	1	2	3	4	1	2
Mec:	els:			1				j ·
1.	Aluminum					,		
2.	Antimony							
3.	Arsenic							
4.	Barium	Z.001	2.001	1.001	2.001		0,008	
5.	Beryllium							
6.	Cadmium	4.002	1,002	1.002	<.002		1.002	
7.	Calcium							
8.	Chromium	2.005	1.005	<.005	2.005		<.005	
9.	Cobalt							
10.	Copper							
11.	Iron							
12.	Lead							
13.	Magnesium							
14.	Manganese							
15.	Mercury							
16.	Nickel							
17.	Potassium							
18.	Selenium			<u> </u>			1	
19.	Silver	2.002	0.014	0.017	0.019		12.002	i
20.	Sodium							
21.	Thallium			1				
22.	Tin			<u> </u>				
23.	<b>Vanadium</b>							
24.	Zinc							_
Och	er:		1	<u> </u>			1	
Cyar	nide		1		<u> </u>		1	

### Form V

Q. C. Report No. #3

SPIKE	SAMPLE	RECOVERY

LAB NAME	adien	_ analyti c		. Plant	4
DATE	26-86			mple No.	
<del></del>		<del> '</del>	Unics	ug/ml	
		Hatrix was	w	<i>J</i> ''	
Compound	Control Limit ZR	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R!
Mecals:	1				1
l. Aluminum	75-125			<u> </u>	1
2. Antimony	•				1
3. Arsenic	-				
4. Barium	•	0.96	0.046	1.00	19/
5. Beryllium	•				1
6. Cadmium		0.86	<.003	1.00	186
7. Calcium	•		,		1
8. Chromium	•	0.92	0.018*	1.00	190
9. Cobalt	•				1
10. Copper	-				}
ll. Iron					1
12. Lead	-				1
13. Magnesium	•				<u> </u>
14. Manganese	• !-				1
15. Mercury	•				
16. Nickel	•				1
17. Potassium	•			İ	<u> </u>
18. Selenium	•				
19. Silver	•	0.98	0.027	1.00	95
20. Sodium	•				
21. Thallium	•				İ
22. Tin	•				
23. Vanadium	•				
24. Ziac	•				1
Other:				•	<u> </u>
	İ				1
Cyanide	•			l	

Commencs: \* value is less than 5 x 1d1.

 $<sup>1 = [(</sup>SSR - SR)/SA] \times 100$ 

<sup>&</sup>quot;R"- out of control

### Form V

Q. C. Report No. #3

SPIKE SAMPLE RECOVERY

LAB NAME	Radian	_ pre-diges		o. Plant	4
DATE	3-26-86		EPA Sa Lab Sa	mple No. mple ID No. 86	-01-206
			Units	ug/me	
		Matrix <u>u/a</u>	ter .		
Compound	Control Limit	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	TR!
Mecals:		1 223474 (3047)	1	Added (SR)	1
l. Alumin	um 75-125			1	1 1
2. Antimo				<del> </del>	
3. Arseni				1	<u> </u>
4. Barium	-	17	0.031	20	85
5. Beryll.	ium -				
6. Cadmiu	<b>a</b>   •	0.43	0.004 *	0.50	85
7. Calciu	<u> </u>	<u> </u>	!	<u> </u>	<u> </u>
8. Chromit	um ·	1.7	2.005	2.0	85
9. Cobalt				L	<u> </u>
10. Copper		<u> </u>		1	1
11. Iron		<del></del>		<u> </u>	
12. Lead		<del> </del>	<u> </u>	<del>!</del>	<u> </u>
13. Magnes:	tum -	<del> </del>	<u> </u>	<del></del>	<u> </u>
14. Mangan	ese · · ·	<del></del>		<u> </u>	
15. Mercur				<u> </u>	
16. Nickel			1	<u> </u>	<u> </u>
17. Potass			1	<u> </u>	
18. Selecti		<del> </del>			
19. Silver	<del></del>	0.22	0.005*	0.25	86
20. Sodium		<del></del>		<del></del>	<u>!</u>
21. Thaili	<u> </u>	<del> </del>			!
22. <u>Tin</u>					<u> </u>
23. Vanadi	um -				<u> </u>
24. <u>Zinc</u>				<u> </u>	<u> </u>
Other:		1	<u> </u>	<u>!</u>	<u>                                      </u>
Cyanide	•	<del>-1</del>	<u> </u>	<u> </u>	<u>'</u>
-7			<del></del>	<u> </u>	<u></u>

Comments: \* value in less than 5 x /d/

 $<sup>^{1}</sup>$  ZR = [(SSR - SR)/SA] x 100

<sup>&</sup>quot;R"- out of control

### Form VI

Q. C. Report No. #3

DUPLICATES

LAB NAME	Radian	analytical	CASE NO. Plant 4 EPA Sample No.
DATE	3-26-86		Lab Sample ID No.86-01-206-05 Units 10/ml

Macrix water Control Limit Sample(S) RPD-Dublicate(D) Compound Metals: 1. Aluminum Antimony 3. Arsenic 0.15 0 0.15 -4. Barium 5. Servilium 2.002 0.004 \* 6. Cadzium MC 7. Calcium 0.016 \* 0.016 K 0 8. Chromium 9. Cobalt 10. Copper 1 II. Iron 12. Lead 13. Magnesium 14. Manzanese 15. Mercury 16. Nickel 17. Potassium 18. Selenium 0.016 0.017 19. Silver 20. Sodium 21. Thallium 22. <u>Tin</u> 23. Vanadium 24. Zinc Other: Cyanide

To be added at a later date.

<sup>\*</sup> Out of Control

 $<sup>2 \</sup>text{ RPD} = [|S - D|/((S + D)/2)] \times 100$ 

<sup>1 -</sup> Non calculable RPD due to value(s) less than CRDL \* value is less than 5 x id!

# Form VI

Q. C. Report No. 3

DUPLICATES

LAB NAME Radian	gre-digest	CASE NO. Plant 4
DATE 3-26-86		EPA Sample No.  Lab Sample ID No.86-01-206-08  Units regimb

	Macri	x water	-19/ma	
Compound	Control Limit	Sample(S)	Duplicate(D)	P.P.D.
Metals:				
2. Antimony				
3. Arsenic				
4. Barium		0.33	0.27	20
5. Beryllium				
6. Cadmium		0.008 *	0.003*	83
7. Calcium				! 
8. Chronium	<u> </u>	0.017 * 1	0.014*	19
9. Cobalt			· · · · · · · · · · · · · · · · · · ·	<u> </u>
10. Copper	<del></del>		<del> </del>	
11. <u>Iron                                     </u>		<u> </u>		
12. Lead				
13. Magnesium	·			
14. Manganese				
15. Mercury				
16. Nickel	·····			
17. Potassium				
18. Selenium	<del></del>			
19. Silver		0.016	0.018	12
20. Sodium	<del></del>			
21. Thallium	<del></del>			
22. <u>Tin</u>			<del></del>	<u> </u>
23. Vanadium	·			
24. Zinc	····			1
Other:				
				<del> </del>
Cyanide				1

<sup>\*</sup> Out of Control

To be added at a later date.

 $<sup>^{2}</sup>$  RPD = [|S - D|/((S + D)/2)] x 100

<sup>1 -</sup> Non calculable RPD due to value(s) less than CRDL

<sup>\*</sup> value is less than 5 x id!

شماح ودودوه	المعتمدين المعتمدين المعتمدين المعتمدين المعتمدين المعتمدين المعتمدين المعتمدين المعتمدين المعتمدين المعتمدين	Plant 4	86-01-	-206	0	80-	14 0	14 04/9C	DATA		UNITS	Mon	lml	
ELEMENT	ANALYSIS DATE	QC DATA	ATA		dna	DUPLICATE	ANALYS I S	2		SPIKE		RECOVERY		BLANKS
		FOUND VALUE	TRUE VALUE	&R	SAMP!"	SAMP	DUPL	RPD	SAMP#	SR	SSR	SA	8R	
94	3-10-86	0.43	040'	801	300.90E	< 003	5003	AIC	gd ap	5003	610	080'	95	dig bl <,003
	800 = 17:	7 6 7							an ap. 306-070	5003	_	080'	001	cal We <,003
На	3-9-86	0500	0500'	100	300-90E	50003	C100'>	מפ	300-050 306-050		101.30	0800'	201	44.000 ×
P	6000'=1p1	0400'	,0040.	001										
		8400'	10040	105										
		0400'	10040	100										
								ı						
Pb	3-0-86	1043	.043	00/	206.03c	. 606	* 00°	29	306-070	Loor	.033	080'	38	249.W
	190'=101	8 70	640	701				,	ar ap	* 6003	,033	HE0.	88	CU 186
7		170	870'	95										Cal 146
29		2	*											
3 '	0.0.86	050	080	901	pa dup	, 00a	e00'>	Me	2010-016 4,003	×,003	.0063	310	63	cel 118
	600 - 17:	640'	75 0	86	an duf	400%	€003	אופ	an op	5003	. 00 S 4	HE0.	20	ay th
	22	870	050'	96					26.6 Ede >	iutu <003	610	H67	49	COT WE
								_						
an d idl	an dup=analytical duplicate an idl = instrument detection limit	1	sp=analytical sp *=value is le	ike ss th	spike dig dup=pre-d less then five times	=pre-di times t	dig dup=pre-digest duplicate in five times the instrument	plicate rument c	it duplicate dig sp=pre-di instrument detection limit	re-di limit	ge	st spike NC=not calculable	cu) ab	Je



## **CHAIN OF CUSTODY RECORD**

		Field Sample No. 260027
Company Sampled / Address	FORCE PLANT 4	
Sample Point Description	AD P-21 HOD PITC	
Stream Characteristics: MA		
Temperature	Flow	pH
Visual Observations/Comments		
Collector's Name <u>FFTFR A 4JA</u>	Date/Time Sam	pled 3/29/11 1520-1530
Amount of Sample Collected 2-50	omlalass and 4-40	05
Sample Description DRI//////	411D'	
Store at: Ambient 5°C -	10°C	
Caution · No more sample available	☐ Return unused nortion of sam	nie 🖂 Discard unused portions
Other Instructions - Special Handling -	Hazards	
☑ Hazardous sample (see below)	□ Non ho	zardous sample
• •		-
Toxic \	☐ Skin irritant	☐ Flammable (FP< 40°C)
□ Pyrophoric ्	☐ Lachrymator	☐ Shock sensitive
□ Acidic \	□ Biological	☐ Carcinogenic · suspect
□ Caustic	Peroxide	☐ Radioactive
Other		
Sample Allocation/Chain of Possessio	n:	
Organization Name		
Received By	Date Receive	ed Time
Transported By	Lab Sample No. 💹	<u>5-03-005</u>
Comments		
inclusive Dates of Possession		
Received By	Date Receive	ed Time
Transported By	Lab Sample No	
Comments		
Inclusive Dates of Possession		
Organization Name		
_		ed Time
•		
Comments		
Inclusive Dates of Possession		

### Form II

Q.	C.	Report	No.	
----	----	--------	-----	--

		711 <b>447</b> . 1	ANTE CO	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	G CALIBRATIO	N 75575	T	nu3		
LAR	NAME P	dian C	ריעים פפו	VITNOTO		80.5				
	West K		coye							
A.DAI	× 4-23	-810				s Lual	_			
	pound		al Calib	.1		10uing				<del></del>
		True Value		122	True Value		33	Found	23	Method 4
1.	Aluminum			_			_		_	
2.	ABELBORY									1
3.	Arsenic	1.0	1.13	113	1.0	1.19	1119	11.13	113	P
4.	Barium	1.0	1.04	104	1.0	1.03	103	11.01	101	IP
5.	Beryllium						1			
6.	Cadmium	1.0	1.04	104	1.0	11.04	1104	1.03	103	P
7.	Calcium									1
8.	Chrosius	1.0	1.05	105	1.0	11.05	1105	0.991	1991	ι ρ
9.	Cobalt									
10.	Copper		_							1
11.	Iron									1
12.	Lead	1.0	0.994	199	1.0	0.997	1100	0.934	931	P
13.	Magnesium	<u> </u>					<u> </u>			1
14.	Manganese									<u> </u>
15.	Mercury					<u> </u>				<u> </u>
16.	Nickel							<u> </u>		1
17.	Potassium									<u> </u>
18.	Selenium	1.0	1.06		1.0	1.01	ICL	1.05	105	$\rho$
19.	Silver	1.0	0.774	77	1.0	0.771	77	0.758	76	P
20.	Sodium						<u> </u>			<u> </u>
21.	Thallium						<u> </u>			<u> </u>
22.	Tin				<u> </u>		<u> </u>			<u> </u>
23.	Vanadium				1					
24.	Zinc									
Othe	e:						<u> </u>			
							<u> </u>			1
Cyan	14e		<u> </u>				<u> </u>			<u> </u>

THE PARTIES NAMED IN THE PARTIES OF

I Initial Calibration Source <sup>2</sup> Continuing Calibration Source

<sup>3</sup> Control Limits: Mercury and Tin. 80-120; All Other Compounds 90-110

<sup>4</sup> Indicate Analytical Method Geed: P - ICP/Flame AA; F - Furnace

Q. C. Report No. \_\_\_\_\_\_\_BLANKS

قضا	NAME	Radi	an	Corp.
		23-80		

Cyanide

CASE NO. 8003008
UNITS 19/100

Macrix Inicial Continuing Calibration Blank Value Calibration Preparation Preparation Blank Blank Value Compound Mecals: 1. Aluminum Ancimony K0.000 X0001 1120,105/20.100 3. Arsenic 140.003 (0.001 4. Barium 5. Beryllium KO.002 XO.010 <0.002 6. Cadmium 7. Calcium X0.011 K0.005 ×0.000 \*0.008 8. Chromium 9. Cobalt 10. Capper li. Iron <0.080 K0.080K0.080 140,080 12. Lead 13. Magnesium 14. Manganese 15. Mercury 16. Nickel 17. Potassium K0.080K0.080 <0.080 100080 18. Selenium 0.013 < 0.002 1×0.003 0.012 19. Silver 20. Sodium 21. Thallium 22. Tin 23. Vanadium 24. Zinc Other:\_ 11

### Form V

Q. C. Report No.

SPIKE SAMPLE RECOVERY

	adian Ob	P.	CASE N	mple ID No	Light
DATE <u>4-23</u>	2-80	Hatrix	Lab Sar Units (	ig/ml_	-04
Compound	Control Limit	Spiked Sample   Result (SSR)	Sample Result (SR)	Soiked   Added (SA)	   3R!
Mecals:	1				
l. Aluminum	75-125				<u> </u>
2. Antimony	•			ŀ	1
3. Arsenic	•	1.02	1.56	NA	1 NC
4. Barium	•	318	18.4	2.0	1170
5. Beryllium	•				
6. Cadmium	1	3.24	3.21	0.05	160
7. Calcium	•				1
8. Chromium	•	0.189	0.031	0.2	179
9. Cobalt	•				
10. Copper	•				[
ll. Iron	•				1
12. Lead	1	0.593	1 * 0.187	0.5	181
13. Magnesium	•				!
14. Manganese	i				1
15. Mercury	•				
16. Nickel	•				1
17. Potassium	•				
18. Selenium	•	2.19	2.11	INA	1 NC
19. Silver	•	0.284	0.041	0.85	195
20. Sodium	•				1
21. Thallium	•			<u></u>	İ
22. <u>Tia</u>	•				
23. Vanadium	-				
24. Zine	•				1
Other:					
	1	1		1	
		·			

Cyanide

33 AS and Se are not in spiking colution
8 - 11
7 297

 $<sup>\</sup>frac{1}{2R} = [(SSR - SR)/SA] \times 100$ 

<sup>&</sup>quot;R"- out of control

Form VI

Q. C. Report No.

DUPLICATES

LAB HAME Radian Corp. AJATE 4-23-86

	Hatt	1x		
Compound 1	Control Limit	Sample(5)	Duplicate(D)	1 225-
ietals:				
l. Aluzinuz		!!	<del></del>	
2. Antimony				<u> </u>
Arsenic		1,56 18.4	1.601	1 3.2
4. Barium		18.4	18.4	10
5. Servilium	······································			1
6. Cadmium		3.21	3.19	1 0.63
'. Caicium		1		!
3. Chromium		0.031	0.031	10
Cobale.	····	<u> </u>		<u> </u>
U. Copper		<u> </u>		1
1. Iron 1		<u> </u>		1
12. Lead		X0.187	*0.170	19.5
13. Magnesium	······································	)		)
4. Manganese				1
S. Mercury		}		
6. Nickel		<u>!</u>	 	1
7. Potassium		<u> </u>		1
8. Selenium		2.11	2.07	1.9
9. <u>Silver</u>		0.041	0.036	1 13.0
20. Sodium		<u> </u>	<u></u>	1
21. Thallium				)
22. <u>Tin</u>				1
23. Vanadium				<u> </u>
24. <u>Zinc</u>				<u> </u>
Other:				<u> </u>
			<u> </u>	<u> </u>
Cyanide		<u> </u>	<u> </u>	1

of Concret LEK'S IOL

To be added at a later date.

 $<sup>2 \</sup>text{ RPD} = [(S - D)/((S + D)/2)] \times 100$ 

<sup>1 -</sup> Non calculable RPD due to value(s) less than CRDL

Complied 4-30-86

QUALITY CONTROL DATA SUMMARY

KKKEN BIOLOGIC BOOLOGIC KESSISSE BIOLOGICA BIO

Workorder SURSUS

Cilent Manet 4

Units Mg/Oul

	BLANKS	anna	socias	<0.000										
	<b>\$</b> R			001							_			
ERY	VS			030										
RECOV	SR			0/10				<u>.</u>						
SPIKE	SSR			0.00										
	SAMP		(0.003	-03A										
	RPD	2.4				-	-							
ANALYSIS	SAMP# SAMP DUPL	36												
LICATE	SAMP	52												
and .	SAMP	-01В												
STDS.	\$R	93	%	001										
I BRAT IC	TRUE	0.005	0.005	0.00E										
CALIBRATION VERIFICATION STDS.	FOUND	0,000 la	0.0048 0.005	0.005										
	DATE			10(-02) 4-30-86 0.005 0.005 100										
	PARAMETER			Ha(-03)	)			7	29	3				

RPD = [(/S-D/)/((S+D)/2)]x100 RPD = Relative Percent Difference NC = Moncalculable

SPIKE #R = [(SSR-SR)/SA]x100
\* = Value is less than five times
 the instrument detection limit
IDL = Instrument Detection Limit

A = Analytical P = Predigestion

Colatile Organics 860031760	DETECTION LIMITS	
METHOD (OC)		METHOD DETECTION
		LIMIT
COMPOUND	-01-02	
Chloromethane	0.08	
Fromomethane	1.18	
7inyl Chloride	0.8	
bloroethane	0.53	
fethylene Chloride	0.25	
Trichlorofluoromethane	0.10	
,1-Dichloroethene	0.13	
l,1-Dichloroethane	50.0	
Trans-1,2-Dichloroethene	0.10	
Chloroform	0.05	
1,2-Dichloroethaue	0.03	
l,l,l-Trichloroethane	0.03	
Carbon Tetrachloride	0.12	
Bromodichloromethane	0.10	
.2-Dichloropropane	0.04	
Trichloroethene	0.12	
Dibromochloromethane	0.09	
2-Chloroethylvinyl Ether	0.13	
Bromoform	0.20	
Tetrachloroethene	0.03	
Chlorobenzene	0,25	
,3-Dichlorobenzene	0.32	
,2-Dichlorobenzene	0.15	
,4-Dichlorobenzene	0.24	

DETECTION LIMITS

VOLATILE ORCANICS

METHOD GOOD

£-												
FECTION LIMIT												
DE.												
<b>)</b>												
	CV-10-	0,3	ر م م	ر ر	d 0	0.8	th (c)	J.				
COMPOUND		BENZENE	TOLUENE	ETHYLBENZENE	CHLOROBENZENE	1,4-DICHLOROBENZENE	1,3-DICHLOROBENZENE	1,2-DICHLOROBENZENE				
		CO-10-	-OI_O2	-OI-02 0,3	OUND -01,-02 0,2 0,3 NZENE 0.3	O.A.  O.A.  O.A.  NZENE  O.A.  O.A.  ENZENE  O.A.  O.A.  O.A.  O.A.  O.A.	OUND -OI, -OZ  O, -OZ  NZENE  O, -OZ  ENZENE  O, -OZ  HILOROBENZENE  O, -OZ  O	DUND  -OI,-OZ  O, A  NZENE  O, A  HLOROBENZENE  O, A  HLOROBENZENE  O, A  HLOROBENZENE  O, A  C, A	NZENE O, 3 HLOROBENZENE O, 3 HLOROBENZENE O, 3 HLOROBENZENE O, 3 HLOROBENZENE O, 3 HLOROBENZENE O, 3 HLOROBENZENE O, 4	DUND ——OI ——OB  O. A  NZENE  O. A  HLOROBENZENE  C. A  HLOROBENZENE  C. A  HLOROBENZENE  O. A  O. A  O. A  O. A	NZENE O. 2 HLOROBENZENE O. 2 HLOROBENZENE O. 2 HLOROBENZENE O. 2 HLOROBENZENE O. 2 HLOROBENZENE O. 4	O.3

QUALITY CONTROL DATA SUMMARY

Compiled 5-30-36

Workorder SCOCE 176

CIIent Plant 4

units ellessal

	ANALYSIS	CAL	CALIBRATION	TDS.	6	PLICATE	ANALYSIS			SPIKE	RFCOVERY	≿		
PARAMETER	DATE	FOUND	FOUND TRUE SR	88	SAMP	SAMP DUPL	DUPL	RPD	SAMP	SSR	1 1	SA	8	BLANKS
7	5-10-86 0 mas mas	0 mas	Omst	92										aĝ.
Cample		7000	1	92										
-03-03		Gangerana	- 1	10										
		0.0050000	0.0039	100/										
								•						
7														
30		,												
2					• *									
									·					
		[10]			,	<i>dp</i> 1/11	4 4447							

RPD = [(/S-D/)/((S+D)/2)]x100 RPD = Relative Percent Difference NC = Noncaiculable

SPIKE #R = [(SSR-SR)/SA]x100 \* = Value is less than five times

A = Analytical P = Predigestion

> the instrument detection limit IDL = instrument Detection Limit

- and in was weld for the standards and tolomes

86-0321



### **CHAIN OF CUSTODY RECORD**

		Field Sample No. 860026
Company Sampled / Address AIR	FORCE PLANT 4	
		PITS
Stream Characteristics: NA		
_ · ·	Flow	pH
Visual Observations/Comments		·
Amount of Sample Collected 2-500	me glass our 4-vo	ampled 2/28/36 1520-1530
Sample Description <u>DRILLIN 6</u>	MUD -	
Store at: ☐ Ambient ☐ 5°C ☐ —	10°C SOther 4°C	
☐ Caution - No more sample available	☐ Return unused portion of s	ample   Discard unused portions
Other Instructions - Special Handling -	Hazards	
		soil
☐ Hazardous sample (see below)	□ Non	-hazardous sample
□ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C
☐ Pyrophoric	☐ Lachrymator	☐ Shock sensitive
□ Acidic	☐ Biological	☐ Carcinogenic - suspec
☐ Caustic	□ Peroxide	☐ Radioactive
□ Other	- · · · · · · · · · · · · · · · · · · ·	
Sample Allocation/Chain of Possessio	n:	
Organization Name RAS -	•	
Received By PAW	Date Rec	eived <u>3-3 %6</u> Time <u>0900</u>
Transported By PAW	Lab Sample No	·
Comments	VOAS TO SUC	
Inclusive Dates of Possession		
Organization Name		
Received By	Date Rec	eived Time
Transported By	Lab Sample No	86-03-021
Comments	1	
Inclusive Dates of Possession		
Organization Name		
Received By	•	eived Time
-		
Comments		
Inclusive Dates of Possession		



86-03-176

mud F-23624, 67. WATER P-22, 601, 602

### **CHAIN OF CUSTODY RECORD**

,		Field Sample No.
Company Sampled / Address	m + 4	
Sample Point Description Mvd	sample	
Stream Characteristics:	·	
Temperature	Flow	pH
Temperature Visual Observations/Comments/	und sturn samples	
Collector's Name Toba Wolf	Date/Time Sample	d 3-20-86 1400 ng
Amount of Sample Collected 4 503		
Sample DescriptionStore at:	10°C 🗆 Other	
☐ Caution - No more sample available	☐ Return unused portion of sample	■ □ Discard unused portions
Other Instructions - Special Handling -	Hazards	
Other Instructions - Special Handling -	ryeables) and EP To)	Kichy- Tonitubility
□ Hazardous sample (see below)	☐ Non-haza	rdous sample
□ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C
□ Pyrophoric	☐ Lachrymator	□ Shock sensitive
🗆 Acidic	☐ Biological	☐ Carcinogenic - suspect
□ Caustic	☐ Peroxide	☐ Radioactive
□ Other		
Sample Allocation/Chain,of Possessio	n:	
Organization Name		
Organization Name	Date Received	Time : 7
Transported By	Lab Sample No	8603176
Comments	- 12 15 15 10 1 1 1 WC	
nclusive Dates of Possession	P 33 3 4 72 5	
Organization Name		
Received By	Date Received	Time
Transported By	Lab Sample No	<del></del>
Comments		
nclusive Dates of Possession		
Organization Name		
Received By		
Transported By		
Comments		
Inclusive Dates of Possession		

#### Form II

Q.	C.	Report	No.	
----	----	--------	-----	--

#### INITIAL AND CONTINUING CALIBRATION VERIFICATION<sup>3</sup> CASE NO. 3(003/740-02-03 LAB NAME

ADAI	<b>=</b> 0-10	-86			UNII	s uc	ilm	Q.		<del></del>	
Compound			al Calib	.1	Continuing Calibration <sup>2</sup>						
	als:	True Value	Found	<u> </u>	True Value	Found	3	Found	=	Method 4	
	Aluminum								1	<u> </u>	
	Ancinony	<u>!</u>	1 000			1	027			<u> </u>	
3.	Arsenic	1.0	10.968			0.43				P	
4.	Bartum	1.0	1.032	103	1.0	1.023	100		<u> </u>	IP	
5.	Beryllium								<u> </u>		
6.	Cadmium	1.0	11.015	102	1.0	1.004	100			1 P	
7.	Calcius				<u> </u>					1	
8.	Chromius	1.0	11.031	1021	1.0	1.007				1 P	
9.	Cobalt		<u> </u>								
10.	Copper		<u> </u>	1 1					1 1		
11.	Iron	<u> </u>								1	
12.	Lead	1.0	10.879	1881	1.0	0.891	89			$\perp P$	
13.	Magnesium										
14.	Manganese									1	
15.	Mercury										
16.	Mickel				,				<u> </u>	i	
17.	Pocassium								<u> </u>	1	
18.	Seletium	1.0	1.014	1011	1.0	10,974	97		\	1 P	
19.	Silver	1.0	10,964	90	1.0	0.947	45			IP	
20.	Sodium										
21.	Thallium										
22.	Tis										
23.	Vanadium										
24.	Zise										
Othe	r:										
Cyan	ide										
1 1	nicial Cal	ibration So	urce		<sup>2</sup> Contin	uing Cal	ibrac	ion Sour	C8		

THE STATE OF THE SERVICE OF THE SERV

<sup>3</sup> Control Limits: Mercury and Tim. 80-120; All Other Compounds 90-110

<sup>4</sup> Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

LAB NAME		CASE NO. 86/8/76-02-0
ADATE 5-10-80		UNITS JOANNO
	Magada	<u> </u>

	Initial	al Continuing Calibration				
Preparation	Calibration	Blank Value			Preparation 31a	
Compound	Blank Value	1 1	2	3	4	1 2
letals:			<u> </u>			i · ·
I. Aluminum						MOIOP
2. Antimony						
3. Arsenic	LC.00	10.06				10.00
4. Barium	$\langle 0.001$	K0.001				K0.001
5. Beryllium						
. Cadadus	<0.002	10.002				110002
7. Calcium						
. Circuius	<0.005	10.005	}		j	10.005
. Cobalt						
LO. Copper						
li. Iron						
12. Lead	<0.08	K0.08				1140.081
13. Magnesium						
14. Manganese					]	
15. Mercury						
l6. Nickel						
17. Pocassium						
18. Selenium	<0.08	KOR				11/0.08 1
19. Silver	(0.002	11<0.002				1K0.0021
20. Sodium						
21. Thallium						
22. Tin						
23. Vanadium						
24. Zine						
Other:						
Cyanide					!	

### Form V

Q. C. Report No. \_

# SPIKE SAMPLE RECOVERY

DATE <u>5-16-</u>	86	CASE NO. NO 13/7/EPA Sample No. QUE Lab Sample ID No. Que Units ////////////////////////////////////					
Compound	Control Limit	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	   32!		
Metals:					<u> </u>		
l. Aluminum	75-125			1	1		
2. Antimony	•		1	1	ı		
3. <u>Arsenic</u>	•	0.533	1+0,003	0.7	174		
4. Barium	-	9.910	0.151	12	18/		
5. Beryllium	-				!		
6. Cadmium		10.089	*0.005	0.13	160		
7. Calcium	-				1		
Chromium	•	0.547	1*0.019	0.65	18/		
. Cobalt	•						
10. Copper	•			1	1		
ll. <u>Iron</u>	•			1	1		
2. Lead	•	0.601	10.00	0.30	170		
3. Magnesium	•				1		
4. Manganese	•				1		
5. Mercury	•				1		
6. Nickel	•			1	1		
7. Pocassium	•			]	ļ		
8. Selenium	•	*0.103	1 < 0.08	0.15	169		
9. Silver	•	0.467	0.013	0.60	170		
O. Sodium	-	\		1	)		
1. Thallium	•			1	1		
2. Tia	•				1		
3. Vanadium	•						
4. Zine	•				1		
Other:				•	1		
	1				ı		
yanide	1			1	l .		

Somenes: X-147 lue less than 5x0 the INL

<sup>•</sup>  $\frac{1}{2}$  •  $[(55R - 5R)/5A] \times 100$ 

<sup>&</sup>quot;7"- out of control

### Form VI

Q. C. Report No.

DUPLICATES

LAB NAME			CASE NO. 8008	176
5-16-8	( <b>6</b>		Lab Sample ID No.	JOS OFIT
	Mas	rix	nuis main	0
Compound 1	Control Limit	Sample(S)	Duplicate(D)	RPD-
Metals:				
1. Aluminum	<del></del>	<u> </u>		<del></del>
2. Antimony		1000		110
3. Arsenic		1 < 0.00	<u> </u>	NC
4. Barium	<del></del>	0.090	0.103	7.0
5. Servilium		1		
6. Cadmium		X0.003	<u> </u>	NC
7. Calcium !			1	
8. Chronium		<u> x0.021</u>	X0.025	NCZ
9. Cosais.	<del></del>	<u>i</u>		
10. Copper	<del></del>	}		
II. Iron		<u>i</u>		
12. <u>Lead</u>		1 <0.08	<0.0x	NC
13. Magnesium		1		
14. Manganese				
15. Mercury		ì		
16. Nickel				1
17. Potassium			:	
18. Selenium		1 < 0.08	<0.08	1
19. Silver		1×0,009	1 × 0.008	NC1
20. Sodium				
21. Thallium				1
22. Tin				
23. Vanadium	<del></del>	1	1	1
24. Zine	<del></del>	1	1	}
Otner:		<del></del>		1
			<u> </u>	<u>'</u>
Cyamide	<del></del>	<u> </u>		1
CVatide_		_ '	,	1

more of sections

<sup>1-</sup> Non calculable RPD due to value(s) less than CRDL (NC)
NCI-non calculable due to values less than
3-12 5 times the IDL.

LACAL PRACTOCA - RESPONSE - CRACTOCA - LALACOCA - LALACOCA - LA PROPER - LA PROPER - RESPONSE - PROPERTOCA - PARCHAGA -

Colatile Organics 86031760	DETECTION LIMITS	
METHOD (OC)		METHOD  DETECTION  LIMIT  LIG/L
COMPOUND	-01-02	
Chloromethane	0.08	
Fromomethane	1.18	
Vinyl Chloride	0.8	
Chloroethane	0.52	
ethylene Chloride	0.25	
Trichlorofluoromethane	0.00	
,1-Dichloroethene	0.13	
l,1-Dichloroethane	0.07	
Trans-1,2-Dichloroethene	0.10	
Chloroform	0.05	
1,2-Dichloroethane	0.03	
l,l,l-Trichloroethane	0.03	
Carbon Tetrachloride	0.12	
Bromodichloromethane	0.10	
1,2-Dichloropropane	0.04	
Trichloroethene	0.12	
Dibromochloromethane	0.09	
2-Chloroethylvinyl Ether	0.13	
Bremoform	0.20	
Tetrachloroethene	0.03	
Chlorobenzene	0,25	
1,3-Dichlorobenzene	0.32	
l,2-Dichlorobenzene	0.15	
1,4-Dichlorobenzene	0.24	

DETECTION LIMITS

SAND RECEPCE STATES CONTROL CO

VOLATILE ORGANICS

METHOD GCD

3152	3603176
COMPOUND	DETECTION LIMIT
	-CO-10-
BENZENE	6.3
TOLUENE	ර. ය ර. ය
ETHYLBENZENE	Q.Q
CHLOROBENZENE	₹;Q
1,4-DICHLOROBENZENE	6.3
1,3-DICHLOROBENZENE	h <sup>(2)</sup>
1,2-DICHLOROBENZENE	P.Q.



AIO-07-18-18 BAL
SAMPLE ID: P-22Water
DATE: 3-27-860
INSTRUMENT:
601/8010
BROMOCHLOROMETHANE: 97
2-BROMO-1-CHLOROPROPANE: 103
602/802 <b>0</b>
a,a,a-TRIFLUOROTOLUENE:

LAB #: 20031710-01B
SAMPLE ID: Pazunter
DATE: 3-27-86
INSTRUMENT:
601/8010
BROMOCHLOROMETHANE:
2-BROMO-1-CHLOROPROPANE:
602/802 <b>0</b>
a,a,a-TRIFLUOROTOLUENE: 104

LAB # SYSTON	GLUF		
CLIENT NAME			
SAMPLE ID			
	**********	*****	********
EPA METHOD 601	DATE: ANALYST: INSTRUMENT:	EPA METHOD 602	DATE: 3/2/21 ANALYST: CI INSTRUMENT: O.O.
COMPOUND	CONCENTRATION (ug/L)	COMPOUND	CONCENTRATION (ug/L)
Chloromethane		Benzene	$N_0$
Bromomethane		Toluene	
Vinyl Chloride	·	Ethyl benzene	
Chloroethane		Chlorobenzene	
Methylene chloride		1.4-Dichlorobenzene	
Trichlorofluromethane		1.3-Dichlorobenzene	
1.1-Dichlorethene		1.2-Dichlorobenzene	
1.1-Dichlorethane		P-Xylene	
Trans-1.2-Dichloroethen	e	M-Xylene	
Chloroform		0-Xylene	
1.2-Dichlorethane			
1.1.1-Trichlorethane			
Carbon tetrachloride			
Bromodichlormethane		[	
1.2-Dichloropropane		SURROGATE RECOVERI	ES:
Trans-1.3-Dichloroprope	ne	601	
Trichloroethene		Bromochloromethane	
Dibromochloromethane		2-Bromo-1-Chloropr	
1.1.2-Trichlorethane		l,4-Dichlorobutane	
cis-1.3-Dichloropropene		602	
2-Chloroethylvinyl ethe	r	a,a,a,-Trifluoroto	luene
Bromoform			
1.1.2.2-Tetrachlorethan	<u>e</u>		
<u>Tetrachlorethylene</u>			
Chlorobenzene			
1.3-Dichlorobenzene		-	
1.2-Dichlorobenzene			
1.4-Dichlorobenzene	<del></del>		

LAB #	KEM BLANK		
CLIENT NAME			
SAMPLE ID			····
	**********	<b>建新典表的 医克里斯氏征 医克里斯氏征 计</b>	
EPA METHOD	DATE:	EPA METHOD	DATE:3/27/36
601	ANALYST:	602	ANALYST: 4
	INSTRUMENT:		INSTRUMENT Q
COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
l	(ug/L)		(ug/L)
		_	1-
Chloromethane		Benzene	~~~~~
Bromomethane		Toluene	<del></del>
Vinyl Chloride		Ethyl benzene	<del></del>
Chloroethane		Chlorobenzene	<del></del>
Methylene chloride		1.4-Dichlorobenzene	<del></del>
Trichlorofluromethane		1.3-Dichlorobenzene	<del></del>
1.1-Dichlorethene			
1.1-Dichlorethane Trans-1.2-Dichloroethe		P-Xylene	<del></del>
Chloroform	ene	M-Xylene O-Xylene	<del></del>
1.2-Dichlorethane		U-AYTERE	· · · · · · · · · · · · · · · · · · ·
1.1.1-Trichlorethane		1	
Carbon tetrachloride		1	
Bromodichlormethane		†	
1.2-Dichloropropage		SURROGATE RECOVER	IES:
Trans-1.3-Dichloroprop	lene	601	
Trichloroethene	<u> </u>	Bromochloromethane	2
Dibromochloromethane		2-Bromo-1-Chloropi	
1.1.2-Trichlorethane		1,4-Dichlorobutane	
cis-1.3-Dichloropropen		602	
2-Chloroethylvinyl eth		a,a,a,-Trifluoroto	luene
Bromoform			
1.1.2.2-Tetrachloretha	ine		
Tetrachlorethylene			
Chlorobenzene			
1.3-Dichlorobenzene		1	
1.2-Dichlorosenzene		1	
1.4-Dichlorobenzene		-	
1		1	
1			
1		I	

LAB #	SYSTO-BLAK	<del></del>	
CLIENT NAME	2131G- DOWN		
SAMPLE ID			
	=======================================		
EPA METHOD	DATE: 3/27/76	EPA METHOD	DATE:
601	ANALYST:	602	ANALYST:
	INSTRUMENT: 4		INSTRUMENT:
COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
	(ug/L)		(ug/L)
Chlores share	$N_{\mathcal{O}}$	n	
Chloromethane Bromomethane		Benzene	
Vinvl Chloride	<del></del>	Toluene	
Chloroethane	<del></del>	Ethyl benzene	
Methylene chloride		Chlorobenzene	<del></del>
Trichlorofluromethane		1.4-Dichlorobenzene	
1.1-Dichlorethene	·····	1.3-Dichlorobenzene	
1.1-Dichlorethane		P-Xvlene	
Trans-1.2-Dichloroethen		M-Xylene	
Chloroform		0-Xylene	
1.2-Dichlorethane		O-RYTEME	
1.1.1-Trichlorethane		1	
Carbon tetrachloride		1	
Bromodichlormethane			
1.2-Dichloropropane		SURROGATE RECOVER	IES:
Trans-1.3-Dichloroprope	ne	601	
Trichloroethene		Browochloromethan	e
Dibromochloromethane		2-Bromo-1-Chlorop	
1.1.2-Trichlorethane		1,4-Dichlorobutan	
cis-1.3-Dichloropropene		602	
2-Chloroethylvinyl ethe	r	a,a,a,-Trifluorote	oluene
Bromoform			
1.1.2.2-Tetrachlorethan	e		
<u>Tetrachlorethylene</u>			
Chlorobenzene			
1.3-Dichlorobenzene		1	
1.2-Dichlorobenzene	<u>V</u> _	_	
1.4-Dichlorobenzene		_	
·		1	

Sees - coccess - coccess - paparal - fraction - reservations and the coccess - paparal - fraction -

LAB # [leng	INT BLANK		
CLIENT NAME			
SAMPLE ID			
	=============	****	******
EPA METHOD 601	DATE: 3 > h. ANALYST: 4 INSTRUMENT Su	EPA METHOD 602	DATE: ANALYST: INSTRUMENT:
COMPOUND	CONCENTRATION (ug/L)	COMPOUND	CONCENTRATION (ug/L)
Chloromethane	$\sim 10^{-1}$	Benzene	
Bromomethane		Toluene	
Vinyl Chloride		Ethyl benzene	
Chloroethane		Chlorobenzene	
Methylene chloride		1.4-Dichlorobenzene	
Trichlorofluromethane		1.3-Dichlorobenzene	
1.1-Dichlorethene		1.2-Dichlorobenzene	
1.1-Dichlorethane		P-Xylene	
Trans-1.2-Dichloroethene		M-Xylene	
Chloroform		0-Xylene	
1.2-Dichlorethane			
1.1.1-Trichlorethane			
Carbon tetrachloride			
Bromodichlormethane			
1.2-Dichloropropane		SURROGATE RECOVERI	ES:
Trans-1.3-Dichloropropen	e	601	
Trichloroethene		Bromochloromethane	
Dibromochloromethane		2-Bromo-1-Chloropr	
1.1.2-Trichlorethane		l,4-Dichlorobutane	·
cis-1.3-Dichloropropene		602	
2-Chloroethylvinyl ether		a,a,a,-Trifluoroto	oluene
Bromoform		1	
1.1.2.2-Tetrachlorethane		4	
<u>Tetrachlorethylene</u>		_	
Chlorobenzene	<del></del>	_	
1.3-Dichlorobenzene	\\	4	
1.2-Dichlorobenzene		-	
1.4-Dichlorobenzene		-	

DATE:	3/27/26	SPIKED VALUE (ug/L)	Analyzed Value	Z Recovery	Analyzed Value	Z Recovery
	INSTRUMENT		D	D	G	6
TEST METHOD	COMPOUND			332222222	****	******
EPA 601	EPA WP 483 CONC. 2	-				
	AND WP 781 CONC.3					
	Methylene Chloride	9.2	<u> </u>		7.8	84
	1.1-Dichloroethylene	10.0	·		2.2	۲2_
	Trans-1.2-Dichloroethylene	5.4				
	Chloroform	43.0			67.1	156
	1.2-Dichloroethane	27.6			21.5	78
	1.1.1-Trichlorethane	14.3			112.6	116
	Carbon Tetrachloride	20.0			18.1	91
	Bromodichloromethane	7.9			8.3	106
	1.2-Dichloropropane	8.0			7.2	91
	Trichloroethene	22.2			93.0	104
	Dibromochloromethane	16.7	<u> </u>		14.3	36
	Bromoform	9.9			10.0	101
	1.1.2.2-Tetrachloroethane	10.0	<u> </u>			
	Tetrachloroethene	6.2				
	Chlorobenzene	8.2			8.5	104
EPA 602	EPA - WP 879 CONC.1		3.5			
	Benzene	30.7	35,2	115		
	Toluene	4.1	3.9	96		
	Ethylbenzene	11.5	11.0	95		
	P-Xylene	19.1	20.1	105		
	M-Xylene	42.6	84.1	157		
	0-Xylene	10.6	3.4	71		
EPA 608	,	(ug/g)				
	Aroclor 1242	58.7	<del> </del>			
	Aroclor 1260	56.8	<u> </u>	<u> </u>	<u></u>	

A book INCRUMIN

BASA PROVINCE EXCOVED CONTRACTOR BASASAN DE CONTRACTOR DE

Workorder SCOCB176

Cilent Plant 4

Units elle line

	ANALYSIS		and	LICATE	DUPLICATE ANALYSIS			SPIKE	RECOVERY	RY		
PARAMETER	DATE	FOUND TRUE SR	SAMP#	SAMP	DUPL	GEN GEN GEN GEN GEN GEN GEN GEN GEN GEN	SAMP#	SSR		SA	SR.	BLANKS
7		Etc. 86 0 mashing 92										
-		ŧ .										$\sigma_{\tilde{s}}$
01-k1-		0,000,000,000										<b>5</b>
		001 Beographics										
7												
31												
8												
$RPD = \Gamma($	RPO = [(/S-D/)/((S+D)) = 08	001~1.67	9	אנ קט =	13 - d33 / J	001~[\$5/(85-855)] = 8% 3X185	Ş		4	+	-6	
: י ר	0.01111000	001XT/7//	こしつ	1 2 1	グーとののと	ユニメ T 40 / 1 ×	2		ij <b>≪</b>	A = Analytical	-ca-	

RPD =  $[(/s-D/)/((S+D)/2)]\times 100$ RPD = Relative Persent Difference NC = Noncalculable

SPIKE %R = [(SSR-SR)/SA]x100 \* = Value is less than five times

A = Analytical P = Predigestion

> the Instrument detection limit IDL = Instrument Detection Limit

**+:**-.

of the standards and blanks: Form to be a dance was word

#### Form II

Q. C. Report No.

		THEFT WID COLL	WITHOUTH CONTINUENT TOW	A PWTL TOWN
هما	NAME	<del></del>	CASE NO	· 8(0031710-02;
			emi No.	

A <b>.</b>	• <i>5</i> 110	010				110	100	. 2		
	5-110			1	UNIT	5 <u> </u>	<u>4 1/7)</u>	<u> </u>		
	ound		el Calib.			inuing T	1			,
Meta		True Value	Found	<u> </u>	True Value	Found	33	Found	<u>==</u>	Mechod
1.	Aluminum	1								
2.	Ancimony			00		0.00	00			
3.	Arsenic	40	0.968		1.0	0.43				P
4.	Barium	1.0	1.032	103	1.0	1.003	102			IP
5.	Beryllium									1
6.	Cadmium	1.0	1.015	102	1.0	1.004	1001			P
7.	Calcium									1
8.	Chromium	1.0	1.031	102	1.0	1.007	1011		- 1	1P
9.	Cobalt									<u> </u>
10.	Copper									1
11.	Iron									
12.	Lead	1.0	0.879	38	1.0	0.891	89			P
13.	Magnesium									
14.	Manganese									
15.	Mercury								j	ı
16.	Nickel									1
17.	Potassium		_							1
18.	Selenium	1.0	1.014	ICL	1.0	0.974	97			1 P
19.	Silver	1.0	0.964	96	1.0	0947	45			i P
20.	Sodium									
21.	Thallium									
22.	Tin									
23.	Vanadium									
24.	Zinc									
Other	:									
Cyan	ide				<b> </b>					
				أسيسيا		<u> </u>	لـــــــــــــــــــــــــــــــــــــ			

<sup>1</sup> Initial Calibration Source 2 Continuing Calibration Source

<sup>3</sup> Control Limits: Mercury and Tin. 80-120; All Other Compounds 90-110

<sup>4</sup> Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

	Form III
	Q. C. Report No.
	BLANKS
T UB WAME	C.CT

CASE NO. SUB176-03:03

ADATE 5-10-80

MARTIX

	Initial	Contin	ing Ca	libratio	<u> </u>		
Preparation	Calibration		Blank V	alue		Preparation	on Blank
Compound	Blank Value	1 1	2	_ 3	4	1	2
Metals:			1				
l. Aluminum						GOICE	
2. Antimony							
3. Arsenic	<0.00	KO.06				10.00	
4. Barium	$\langle C, QC \rangle$	K0.001				KOCCII	
5. Beryllium							
6. Cadmium	<0.002	10.002				1000	
7. Calcium							
8. Chrostus	<0.005	1K0.005				10.005	
9. Cobalt							
10. Copper							
ll. Iron							
12. Lead	LC.08	K0.08				10081	
13. Magnesium						i	
14. Manganese					<u></u>		
15. Mercury					<u> </u>		
16. Nickel							
17. Potassium							
18. Selenium	<0.08	1KO081				110008 1	
19. Silver	(0.002	11<0.002				KO.0021	·
20. Sodium				_			
21. Thallium		11 1					
22. <u>Tin</u>							
23. Vanadium							
24. Zine							<del></del>
Other:						11	
						11	
Cyanide		11 1			!	11	

### Form V

# Q. C. Report No.

#### SPIKE SAMPLE RECOVERY

	86	Hatrix		iple ID No. 2	13
compound	Control Limit	Spiked Sample   Result (SSR)	Sample Result (SR)	Spiked Added (SA)	   TR
ecals:	80-120				1
. Aluminum	-75-136				!
. Antimony	•		<u> </u>		!
. Arsenic	•	0.583	1x0.003	0.7	17
. Barium	•	9.910	0.151	12	181
. Beryllium	•				!
. Cadmium	•	10.089	*0.005	0.13	1606
. Calcium	•				
. Chromium	•	0.547	X0.019	0.65	18/
. Cobalt	•				
O. Copper	•				
1. Iron	•				
2. Lead	•	0.601	10.08	0.80	179
J. Magnesium	•				!
4. Manganese	•			<u> </u>	!
5. Mercury	•				1
6. Nickel	•				1
7. Potassium	•				1
8. Selenium	•	*0.103	<0.08	0.15	16
9. Silver	•	0.467	0.013	0.60	170
O. Sodium	•				<u> </u>
1. Thallium	•				i
2. Tin	•			•	}
3. Vanadium			<del> </del>		ļ
4. Ziac	•			<u> </u>	<u>-                                      </u>
ther:				•	:
yanide	<del></del>		<u> </u>	<u></u>	<u> </u>

# Form VI Q. C. Report No. \_\_\_\_\_ DUPLICATES

			CASE NO. 8608	$i \square I \cap$
AB NAME			The service to. a	102 Otis
5-16-86			. ^ .	-Ca_
	Matr	1X	12722 TIPIW	<u> </u>
ozoouna (	Control Limit	Samble(S)	Duplicate D'	RPD-
ietals:				
. Aluminum			<u> </u>	
. Antimony	<del></del>	(6.5)		4.10
. Arsenic		1 < 0.00	<0.00	<u> </u>
. Barium		0.040	0.103	7.0
. Servilium		1	16.00	
. Caczium		1 *0.003	<0.003	NC
'. Calcium !		<u> </u>	!	
Chromium		x0.031	X0.025	NCZ
Cosalt.		<u> </u>		
O. Copper		<u> </u>		
l. Iron				
12. Lead		1<0.08	<0.08	NC
13. Magnesium		<u> </u>	<u>!</u> _	<u> </u>
4. Manganese 1		<u> </u>	<u> </u>	<u> </u>
5. Mercury		<u> </u>	<u>!</u>	! 
lo. Nickel			!	
17. Potassium i		1		<u> </u>
18. Selen um	· · · · · · · · · · · · · · · · · · ·	10.08	1 <0.08	10.4
19. <u>Silver</u>		*0.0C9	1 × 0.008	· NCI
20. Sodium		<u>!</u>	<u> </u>	<u> </u>
21. Thallium			<u> </u>	1
22. <u>Tin</u>		<u> </u>	<del></del>	<del>!</del>
23. Vanadium		<del></del>		<u> </u>
24. Zinc		<del> </del>		<u> </u>
Otner:		<del></del>	1	<del></del>
			<u> </u>	<del></del>
Cyanide !		i	!	!

To be added at a later date.

2 RPD = [(S - D) ((S + D) 2)] x 100

1 - Non calculable RPD due to value(s) less than CRDL (NC)

NC1-non calculable due to values lloothan

B - 12 5 times the TDL.

1004 preserved with

2 Lacle Mud P-23624, EPTOX WATER P-22 (A)

WATER P-22, 601, 602 (Did not receive water) 11.hrs

# **CHAIN OF CUSTODY RECORD**

		Field Sample No.
Company Sampled / Address	ant 4.	
Sample Point Description	cample.	
Sample Point Description	31111	
Stream Characteristics:		
Temperature	Flow	pH
Temperature	mud sury somples	
Collector's Name Toby Wall		
Amount of Sample Collected 4 570	m/ 10 UA m/ 1/A AZ- Viale	1
Sample Description		
Store at: Ambient 5°C -		
Store at Ambient - 5 C		
☐ Caution - No more sample available	☐ Return unused portion of sample	e 🛘 Discard unused portions
Other Instructions - Special Handling -	Hazarde	
Other Instructions - Special Handling -	prephes) and FP To.	xicity - Ignitubility
	<del>, , , , , , , , , , , , , , , , , , , </del>	
☐ Hazardous sample (see below)	□ Non-haza	rdous sample
□ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C)
☐ Pyrophoric	☐ Lachrymator	□ Shock sensitive
□ Acidic	☐ Biological	☐ Carcinogenic · suspect
□ Caustic	☐ Peroxide	☐ Radioactive
□ Other		
County Allegation (Chair of Bossessian		
Sample Allocation/Chain of Possessio	on:	
Organization Name 777	Pote Posited	3-26-86 Time 1430
		0-03 184
Transported By V IKW	Paa: 2 words 2 to Sac	
Inclusive Dates of Possession	Pas: a voas	
2 h ^	1 1	
	nalytical Services	Oboles - Mas
Received By Mo Katurithe		3/27/8C Time <u>@35</u>
Transported By Federal	Lab Sample No.	-23 (602) both with bea
	th with headspace ?	-23 (602) both with her
Inclusive Dates of Possession	<del></del>	
Organization Name		<del></del>
Received By		Time
Transported By	Lab Sample No	<del></del>
Comments		
Inclusive Dates of Possession		<del></del>



### **CHAIN OF CUSTODY RECORD**

860029	,
860034	

	F	Field Sample No
Company Sampled / Address	FORCE PLANT 4	
Sample Point Description FD I M	6	
Stream Characteristics: NA		
Temperature		
Visual Observations/Comments		
Collector's Name PETER A WATE	RREUS Date/Time Sampled	5/12/86
Amount of Sample Collected 12 V	1AS, 12-500 ml GLASS	
Sample DescriptionStore at: □ Ambient □ 5°C □ -	10°C Sother 4°C	
☐ Caution · No more sample available	·	
Other Instructions - Special Handling -	Hazards <u>NOTEO HYDROCARB</u>	ON ODOR IN CAMPIFS
860032 + 86003°	3	
☐ Hazardous sample (see below)	☐ Non-hazard	ous sample
□ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C)
☐ Pyrophoric	☐ Lachrymator	Shock sensitive
☐ Acidic	☐ Biological	☐ Carcinogenic · suspect
□ Caustic	Peroxide	☐ Radioactive
□ Other		<del></del>
Sample Allocation/Chain of Possessio	n:	
Organization Name (4)9 -		
Pacaigad Ry ( NW NM N-W)	Date Received	1-13 16 Time 1000
Transported By PAW	Lab Sample No.	1-10 16 Time 1666 9005072 YLW 20 16 SAC - 5 15 56
Comments	1 500 mil yar = 20ch 1	YLWAG TO SACL- 5 15 -6
Inclusive Dates of Possession		
Organization Name		
Received By		
Transported By		
Comments	•	
Inclusive Dates of Possession		
Organization Name		
Received By		Time
Transported By		
Comments		
Inclusive Dates of Possession		

DATE:	Sloybe	SPIKED VALUE (ug/L)	Analyzed Value	Z Recovery	Analyzed Value	Z Recovery
	INSTRUMEN	I	D	D		
TEST METHOD	COMPOUND	*****	********			********
EPA 601	EPA WP 483 CONC. 2  AND WP 781 CONC.3					
	Methylene Chloride	9.2				
	1.1-Dichloroethylene	10.0				
	Trans-1.2-Dichloroethyl					
	Chloroform	43.0				
	1.2-Dichloroethane	27.6				
	1.1.1-Trichlorethane	14.3				
	Carbon Tetrachloride	20.0				
	Bromodichloromethane	7.9				
	1.2-Dichloropropane	8.0				
	Trichloroethene	22.2				
	Dibromochloromethane	16.7				
	Bromoform	9.9	<u> </u>			
	1.1.2.2-Tetrachloroetha	ne 10.0	,			
	Tetrachloroethene	6.2				
	Chlorobenzene	8.2				
EPA 602	EPA - WP 879 CONC.1	İ	_	1 . 3 %	}	
	Benzene	30.7	38.7	126		
	Toluene	4.1	3,4	82		
	Ethylbenzene	11.5	9.4	82		
	P-Xylene	19.1				
	M-Xvlene	42.6				
	0-Xylene	10.6	-			
EPA 608	4 - 1 - 10/0	(ug/g)				
	Aroclor 1242	58.7			<del></del>	
	Aroclor 1260	56.8	1	<u> </u>		

DATE:	5/14/36	SPIKED VALUE	Analyzed	Z	Analyzed Value	Z Recovery
	INSTRUMENT	(ug/L)	Value B	Recovery	value	Recovery
TEST						       
METHOD EPA 601	COMPOUND EPA WP 483 CONC. 2					
	AND WP 781 CONC.3					
	Methylene Chloride	9.2				<u> </u>
	1.1-Dichloroethylene	10.0				
	Trans-1.2-Dichloroethylene	1				
	Chloroform	5.4 13.3	13.2	102		1
	1.2-Dichloroethane	27 20	1.3	65		
	l.l.l-Trichlorethane	14.3-1.4	1.5	1.09		<u> </u>
	Carbon Tetrachloride	20.0-2.6	2.7	102		
	Bromodichloromethane	7.00.0	1.9	93		
	1.2-Dichloropropane	8.0	3			
	Trichloroethene	22.22.9	2.6	88		<u> </u>
	Dibromochloromethane	16.72.6	2.7	104		<u> </u>
	Bromoform	2,0-2,9		82		<u> </u>
	1.1.2.2-Tetrachloroethane	10.0				<u> </u>
	Tetrachloroethene	-5.2166	1.6	100		
	Chlorobenzene	8.2				ļ
EPA 602	EPA - WP 879 CONC.1				}	}
	Benzene	30.7				ļ
	Toluene	4.1	<u> </u>			<del> </del>
	Ethylbenzene	11.5				<del> </del>
	P-Xylene	19.1		<u> </u>		<del> </del>
	M-Xylene	42.6	ļ			<del> </del>
	0-Xylene	10.6				
EPA 608		(ug/g)	1			
	Aroclor 1242	58.7				<del> </del>
	Aroclor 1260	56.8				<u> </u>

DATE:	5/15/26	SPIKED VALUE (ug/L)	Analyzed Value	% Recovery	Analyzed Value	Z Recover
	INSTRUMENT		G	G		
TEST METROD	COMPOUND					********
EPA 601	EPA WP 483 CONC. 2					
	AND WP 781 CONC.3					
	Methylene Chloride	9.2				
	1.1-Dichloroethylene	10.0				
	Trans-1.2-Dichloroethylene	5,4				
	Chloroform	-43.0 ld 0	12.7	106		
	1.2-Dichloroethane	27.6 7.6	1.5	74		
	1.1.1-Trichlorethane	14.3 1.4	1.3	94		
	Carbon Tetrachloride	20.0-2.6	2.3	90		
	Bromodichloromethane	7.90.0	2.0	180		
	1.2-Dichloropropane	8.0		·		
	Trichloroethene	22.2 2.9	2.5	86		
	Dibromochloromethane	16.72.6	2.6	100		
	Bromoform	9.9.9	2.2	74		
	1.1.2.2-Tetrachloroethane	10.0				
	Tetrachloroethene	-6-21.6	1.1.	100		
	Chlorobenzene	8.2				
EPA 602	EPA - WP 879 CONC.1					
	Benzene	30.7				
	Toluene	4.1				
	Ethylbenzene	11.5				
	P-Xylene	19.1				
	M-Xylene	42.6				
	0-Xylene	10.6				
EPA 608		(ug/g)				li:
	Aroclor 1242	58.7				
	Aroclor 1260	56.8				

LAB # System BU	WIL		1	<del></del>
CLIENT NAME				
SAMPLE ID	<del></del>			<del></del>
******		25222		**********
EPA METHOD 601	DATE: // ANALYST: / INSTRUMEN	or TBu	EPA METHOD 602	DATE: ANALYST: INSTRUMENT:
COMPOUND	CONCENTRA (ug/L)	TION	COMPOUND	CONCENTRATION (ug/L)
Chloromethane	1	10_	Benzene	
Bromomethane		Ĩ	Toluene	
Vinyl Chloride			Ethyl benzene	
Chloroethane			Chlorobenzene	
Methylene chloride			1.4-Dichlorobenzene	
Trichlorofluoromethane			1.3-Dichlorobenzene	
1.1-Dichlorethene		<u></u>	1.2-Dichlorobenzene	
1.1-Dichlorethane			P-Xylene	
Trans-1.2-Dichloroethene	·		M-Xylene	
Chloroform			0-Xylene	
1.2-Dichlorethane				
1.1.1-Trichlorethane				
Carbon tetrachloride				
Bromodichlormethane				
1.2-Dichloropropane			SURROGATE RECOVERI	ES:
Trans-1.3-Dichloropropen	e		601	
Trichloroethene			Bromochloromethane	
Dibromochloromethane			2-Bromo-1-Chloropr	opane
1.1.2-Trichlorethane			1,4-Dichlorobutane	
cis-1.3-Dichloropropene			602	
2-Chloroethylvinyl ether	-		a,a,a,-Trifluoroto	luene
Bromoform				
1.1.2.2-Tetrachlorethane				
<u>Tetrachlorethylene</u>				
<u>Chlorobenzene</u>				
1.3-Dichlorobenzene	——— + <del> </del>			
1.2-Dichlorobenzene				
1.4-Dichlorobenzene				ļ

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LAB # (AG	7 BLANK		
CLIENT NAME	<del> </del>		<del></del>
SAMPLE ID	· · · · · · · · · · · · · · · · · · ·		
***************	******		**********
EPA METHOD	DATE S/14/86	EPA METHOD	DATE:
601	ANALYST: C		ANALYST:
	analyst: G instrument Bum	att.	INSTRUMENT:
COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
	(ug/L)		(ug/L)
	1-67-7	<del> </del>	
Chloromethane		Benzene	
Bromomethane		Toluene	
Vinvl Chloride		Ethyl benzene	
Chloroethane		Chlorobenzene	
Methylene chloride		1.4-Dichlorobenzene	
Trichlorofluoromethan		1.3-Dichlorobenzene	
1.1-Dichlorethene		1.2-Dichlorobenzene	
1.1-Dichlorethane		P-Xylene	
Trans-1.2-Dichloroeth	ene	M-Xylene	
Chloroform		0-Xylene	
1.2-Dichlorethane			
1.1.1-Trichlorethane	1.36		
Carbon tetrachloride			
Bromodichlormethane			
1.2-Dichloropropane		SURROGATE RECOVER	IES:
Trans-1.3-Dichloropro	pene	601	
Trichloroethene	0.55	Bromochloromethan	e
Dibromochloromethane		2-Bromo-1-Chlorop	ropane
1.1.2-Trichlorethane		1,4-Dichlorobutan	e
cis-1.3-Dichloroprope	ne	602	
2-Chloroethylvinyl et	her	a,a,a,-Trifluorot	oluene
Bromoform		1	
1.1.2.2-Tetrachloreth	ane	1	
Tetrachlorethylene	0.34	1	
Chlorobenzene	<del></del>	1	
1.3-Dichlorobenzene	<del></del>	}	
1.2-Dichlorobenzene	<del></del>	1	
1.4-Dichlorobenzene	<del></del>	-	
		}	
<u></u>		 	

FOR A SECOND COMPANY OF THE PROPERTY OF THE PR

LAB # / PACE ST	Blank - thest	+ 1.5	··· <del>··································</del>
CLIENT NAME			
SAMPLE ID	<del></del>		
****			
EPA METHOD	DATE: 5/15/21	EPA METHOD	DATE:
601	ANALYST:	602	ANALYST:
	INSTRUMENT Bur		INSTRUMENT:
		<u> </u>	
COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
	(ug/L)		(ug/L)
Chloromethane		Benzene	
Bromomethane		Toluene	
Vinvl Chloride		Ethyl benzene	
Chloroethane		Chlorobenzene	
Methylene chloride		1,4-Dichlorobenzene	
Trichlorofluoromethane		1.3-Dichlorobenzene	
1.1-Dichlorethene		1.2-Dichlorobenzene	
1.1-Dichlorethane		P-Xylene	
Trans-1.2-Dichloroethene		M-Xylene	
Chloroform		Q-Xylene	
1.2-Dichlorethane			
1.1.1-Trichlorethane	1.78	_	
Carbon tetrachloride			
Bromodichlormethane			
1.2-Dichloropropane		SURROGATE RECOVERI	ES:
Trans-1.3-Dichloropropen	e	601	
Trichloroethene		Bromochloromethane	
Dibromoculoromethane		2-Bromo-1-Chloropre	opane
1.1.2-Trichlorethane		1,4-Dichlorobutane	
cis-1.3-Dichloropropene		602	
2-Chloroethylvinyl ether	<del></del>	a,a,a,-Trifluoroto	luene
Bromoform	<del></del>	_	
1.1.2.2-Tetrachlorethane		1	
Tetrachlorethylene	0.32	- <del> </del>	
Chlorobenzene	<del></del>	-	
1.3-Dichlorobenzene	<del></del>	4	
1.2-Dichlorobenzene			
1.4-Dichlorobenzene		4	
]			
		1	
<u></u>	<del></del>	<u> </u>	

LAB #	STOP BUWK		
CLIENT NAME			
SAMPLE ID			
***********	*********	******	*********
EPA METHOD 601	DATE: ANALYST: INSTRUMENT:	EPA METHOD 602	DATE: 5/24/26 ANALYST CY INSTRUMENT Color
COMPOUND	CONCENTRATION (ug/L)	COMPOUND	CONCENTRATION (ug/L)
Chloromethane		Benzene	NO
Bromomethane		Toluene	
Vinvl Chloride		Ethyl benzene	
Chloroethane		Chlorobenzene	
Methylene chloride		1.4-Dichlorobenzene	
Trichlorofluoromethan		1.3-Dichlorobenzene	
1.1-Dichlorethene		1.2-Dichlorobenzene	
1.1-Dichlorethane		P-Xylene	1
Trans-1.2-Dichloroethe	ene	M-Xylene	
Chloroform		0-Xvlene	
1.2-Dichlorethane			
1.1.1-Trichlorethane		7	
Carbon tetrachloride		1	
Bromodichlormethane			
1.2-Dichloropropane		SURROGATE RECOVER	IES:
Trans-1.3-Dichloropro	cene	601	:
Trichloroethene		Bromochloromethane	•
Dibromochloromethane		2-Bromo-1-Chloropa	
1.1.2-Trichlorethane		1,4-Dichlorobutane	
cis-1.3-Dichloroproper	ne	602	
2-Chloroethylvinyl et	ner	a,a,a,-Trifluoroto	oluene
Bromoform			<u> </u>
1.1.2.2-Tetrachloretha	ane		
Tetrachlorethylene			
Chlorobenzene		]	
1.3-Dichlorobenzene		}	
1.2-Dichlorobenzene			
1.4-Dichlorobenzene			

	BUNK - 76	1,36		
LIENT NAME				
SAMPLE ID				
· 电电子电子 医二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基				
EPA METHOD	DATE:	EPA METHOD	DATE: 5/24/26	
601	ANALYST:	602	ANALYST:	
	INSTRUMENT:		INSTRUMENTS Q 1	
COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION	
	(ug/L)		(ug/L)	
Chloromethane		Benzene	3.74	
Bromomethane		Toluene	3.77	
Vinvl Chloride		Ethyl benzene	0.51	
Chloroethane		Chlorobenzene		
Methylene chloride		1.4-Dichlorobenzene		
Trichlorofluoromethan		1.3-Dichlorobenzene		
1.1-Dichlorethene		1.2-Dichlorobenzene		
1.1-Dichlorethane		P-Xylene	0.77	
Trans-1.2-Dichloroeth		M-Xylene	1.43	
Chloroform		0-Xvlene	1.03	
1.2-Dichlorethane				
1.1.1-Trichlorethane		]		
Carbon tetrachloride				
Bromodichlormethane				
1.2-Dichloropropane		SURROGATE RECOVERIES:		
Trans-1.3-Dichloropro	Dene	601		
Trichloroethene		Bromochloromethane		
Dibromochloromethane		2-Bromo-1-Chloropropane		
1.1:2-Trichlorethane		1,4-Dichlorobutan		
cis-1.3-Dichloroprope	ene	602		
2-Chloroethylvinyl et	her	a,a,a,-Trifluorot	oluene	
Bromoform		.}		
1.1.2.2-Tetrachloreth		]		
<u> Tetrachlorethylene</u>				
Chlorobenzene				
	<del></del>			
1.3-Dichlorobenzene 1.2-Dichlorobenzene 1.4-Dichlorobenzene				

LAB #: 8605072-01
SAMPLE ID: 860028
DATE: 5-14-86 /5-24-86
INSTRUMENT: B
<b>,</b>
<u>ئ</u>
601/8010
BROMOCHLOROMETHANE: 99% / 101%
2-BROMO-1-CHLOROPROPANE:
602/802 <b>0</b>
a,a,a-TRIFLUOROTOLUENE: 1002/102/2

LAB #: 8605072-02A
SAMPLE ID: 860030
DATE: 5/14/86 /5-24-86
INSTRUMENT: 5
601/8010
BROMOCHLOROMETHANE: 1107/937
2-BROMO-1-CHLOROPROPANE:
602/8020
a,a,a-TRIFLUOROTOLUENE: 9276

LAB 4: 8605072-03
SAMPLE ID: 860031
DATE: 5-14-86/5-24-86
INSTRUMENT: B
, ·
601/8010
BROMOCHLOROMETHANE: 104%
2-BROMO-1-CHLOROPROPANE:
602/802 <b>0</b>
a,a,a-TRIFLUOROTOLUENE: 10276

RAMA DERESSES, PRACTICA - SESTEMBRE DESERVATION OF SECURISES OF SESSESSES PROSESSES PR

LAB #: 86-05-072-04
SAMPLE ID: 86032
DATE: 5-14-86/5-24-86
INSTRUMENT: 8 / D
601/8010
BROMOCHLOROMETHANE: 92 %
2-BROMO-1-CHLOROPROPANE:
602/8020
a,a,a-TRIFLUOROTOLUENE: /00 %

LAB #: 8605072-05
SAMPLE ID: 860033
DATE: 5-14 & 5-24 &
INSTRUMENT: 8
, .
601/8010
BROMOCHLOROMETHANE: 92%
2-BROMO-1-CHLOROPROPANE:
602/802 <b>0</b>
a,a,a-TRIFLUOROTOLUENE: 872

Carlotte

LAB II: OCCUPA CA
SAMPLE ID: 860034
DATE: 5-15 80 5-24-80
INSTRUMENT: B
/
601/8010
001/8010
BROMOCHLOROMETHANE: 1147
2-BROMO-1-CHLOROPROPANE:
602/8020
a.a.a-TRIFLUOROTOLUENE. 99%

### DUPLICATE ANALYSIS

86-05-	072-01		86-05-	072-	02
	-				
uglkg	ug/kg				
RUN#1	RUN#2	RPD	RUN#1	RUN#2	RPD
				\ <u></u>	
20	21	4.9	21	18	15
<del>                                     </del>	i				
		<del> </del>			
				1	
		1			
	20 20	20 21	Ug/kg RUN#1 RUN#2 RPD	### ##################################	### ##################################

 $RPD = \frac{|R_1 - R_2|}{(R_1 + R_2)/2} \times 100$ 

RPD= Relative Percent Difference

#### DUPLICATE ANALYSIS

EPA METHOD 602
VOLATILE ORGANICS

SAMPLE # 86-05-073-01

COMPOUND	RUN#1	Run#2	RPD
Benzene	ND ug/kg	ND ug/kg	NC
Toluene			
Ethyl benzene			
1,4-Dichlorobenzene			
1,3-Dichlorobenzene			
1,2-Dichlorobenzene			
0-Xylene			
M-Xylene			
P-Xylene			
Chlorobenzene	1		

$$RPD = \frac{|R_1 - R_2|}{(R_1 + R_2)/2} \times 100$$

RPD= Relative Percent Difference

#### RADIAN

#### SPIKE RECOVERY

EPA METHOD 601 Volatile Organics	86050 Plant 8600	4		1186				
COMPOUNDS	SSR 🖈	₽∰ SA	SR SR	ZR	SSR	5 dilution	SA	ZR
Chloromethane		<u> </u>						
Bromomethane								
Vinyl chloride								
Chloroethane								
Methylene chloride								
Trichlorofluoromethane								
l,1-Dichloroethene			<del>                                     </del>			<del> </del>		
l,1-Dichloroethane								
trans-1,2-Dichloroethene						<del></del>		
Chloroform	13.9	12.0	ND	1110		<del></del>		
1,2-Dichloroethane	1,00		ND	50				
l,1,1-Trichloroethane	1.78	1.4	22.1	127				
Carbon Tetrachloride	4.22	2.6	NO	162				
Bromodichloroemethane	2.0	2.0	ND	100				
1,2-Dichloropropane								
Trichloroethene	2.8	2.9	ND	97			1	
Dibromochloromethane	2.5	2.6	ND	95		<del>, _</del>		
1,1,2-Trichloroethane								
cis-1,2-Dichloropropene							i	
2-Chlorethylvinyl ether						<del></del>		
Bromoform	1.8	2.9	ND	61				
1,1,2,2-Tetrachloreothan	e							
Tetrachlorethylene	1.9	1.4	ND	119				
Chlorobenzene	-							
1,3-Dichlorobenzene								
1,2-Dichlorobenzene						<del></del>		
1,4-Dichlorobenzene								

\*- Wark subtracted out already.

SSR = Spiked Sample Result

SR = Sample Result

7 341

SA = Spike Added

Complied 6-20-86 46

Workorder 84-15-073-01-406

Client

Units,

PARAMETER DATE FOUND TRUE SR SANCE SANCE SANCE  Hydracebor 6-11-86 208 100 073-05 4400 44 14000 49 0  O 6 4919 ( for 50g unand) 206 208 110  O 10 11 and 6-11-86  O 10 10 10 10 10 10 10 10 10 10 10 10 10	L		ANALYSI	CAL	CALIBRATION S	ON		OI ICATE A	STS ANA			SPIKE	RECOVERY	. BY		
Hydrastban 6-11-86 208 100 073-05 1 106 = 1 mg/m1 (aqueeus) 230 208 110  U 6 mg/g (for 5.0gsamole) 206 208 99  cil and 6-11-86 idl=1 mg/m1 (aqueeus)  6 mg/g (for 5.0gsamole)  i Mote - sample weights for Hydrocorban  i Mote - sample weights for oil and Grease		PARAMETER	DATE	FOUND	IRUE	\$R	SAMP#	SAMP	DUPL	RPD	SAMP#	SSR	1 1	SA	$\Box$	BLANKS
101=149 m1(aqueous) 230 208 110  0 6 4919 (for 5.09 sample 1206 208 99  ci   and		Hydrocerbon	98-11-9	208	208	001	072-05	1/600 mg/	14,000 h	0						
(1) Note - sample weight for oil and beesse	L	)   w/6m   = 701	agueous)	087	208	911										
oil and 6-11-86 078-05 oil and 6-11-86 oil and	لـــــــا	) 6/6m 7 ()	for 5.0g somple		208	99										
ml(agueus)  19 (far 5.0gsample)  Le - sample weights for Hydrocarbon  sample weights for oiland brease																
idl=1 ug/m1(aqvews)  6 ug1g (far 5.0gsamole)  (1) Note - sample weights for Hydrocarbon  sample weights for oil and Grease		oil and	98-11-9					13000 49	16000 US	7						
idl=1491(agvews)  bugg (for 5.0gsample)  . (1) Note - sample weights for Hydrodarbun sample weights for oiland brease	L	brease					İ	,								
(b) Note - sample weights for Hydrocarbon sample weights for oiland brease		idl= 1 ug/m1(a	guews)													
(1) Note - sample weights for Hydrocarbon sample weights for oil and lorease		4) 616n 9	or 5.0gsample													
(1) Note - sample weights for Hydrocarbon sample weights for oilard brease		•														
Note - sample weights for Hydrocarbon sample weight for oiland Grease																
for oil and brease				relants	fer	Hydroc	rban	ranged	fem ,	4.860	-5.059					
	1		sample	Weight		oiland	6rease	Canoe	1 from	4.900	- 5.030					
					ŀ					6						
								}								

RPD =  $[(/s-D/)/((s+D)/2)]\times100$ RPD = Relative Percent Difference NC = Noncalculable

the Instrument detection limit IDL = Instrument Detection Limit SPIKE %R = [(SSR-SR)/SA]x100 \* = Value is less than five times

A = Analytical P = Predigestion



5405018

20029 > 1.4/8

#### **CHAIN OF CUSTODY RECORD**

		Field Sample No
Company Sampled (Address A/R	FORCE DIANT 4	
Sample Point Description FDYA	6	
Character Characteristics 44.4		
Stream Characteristics: ///	Flow	pH
Collector's Name PETER A WATE	FRREUS Date/Time Sa	mpled $\frac{5/12/86}{}$
Amount of Sample Collected 12 1/2	045, 12-500 ml GLA	955
Sample Description		
Store at: ☐ Ambient ☐ 5°C ☐ -	10°C / <b>∑ Q</b> ther <u>4 ° </u>	
☐ Caution · No more sample available	☐ Return unused portion of sa	umple
	·	
860032 + 86003	· · · · · · · · · · · · · · · · · · ·	CARBON DOOR IN SAMPLES
000032 1 00003	2	
☐ Hazardous sample (see below)	□ Non-h	nazardous sample
☐ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C)
☐ Pyrophoric	☐ Lachrymator	☐ Shock sensitive
☐ Acidic	☐ Biological	☐ Carcinogenic - suspect
☐ Caustic	☐ Peroxide	☐ Radioactive
□ Other		
County Allegation (Obside of Bossessia		
Sample Allocation/Chain of Possession Organization Name	n:	
Paceived Ry AND TIM AND	) Data Race	ived 5-13-86 Time 1000
Received By	I ah Sample No	
Comments	1-500 ml sas es es es	ch sample to SAC - 5.13 86
Inclusive Dates of Possession	/ \ -1\	J
Organization Name RAS - SAC		
	Date Rece	ived 5/14/86 Time 9:15
	Lab Sample No	
Comments		
Inclusive Dates of Possession		
Organization Name		
3		ived Time
•		
Comments	· ·	
Inclusive Dates of Possession		



#### **CHAIN OF CUSTODY RECORD**

	Fie	old Sample No. <u>860035-7</u>
Company Sampled / Address AIR F	ORCE PLANT 4	
Sample Point Description	AND BLOG 21 AREA SA-	5 -> SB-10
Stream Characteristics: N/A		
Temperature	Flow	оН
Visual Observations/Comments		PII
Collector's Name <u>PETER A WA</u>	TERREUS Date/Time Sampled _	7/21 -> 7/22/86
Amount of Sample Collected//_ ///	ASON TAKS	
Sample Description <u>SO/L</u> Store at: □ Ambient □ 5°C □ −1		<del></del>
Store at: Ambient 5°C -1	10°C COther 4°C	
☐ Caution · No more sample available	☐ Return unused portion of sample ☐	Discard unused portions
<u> </u>		
Other Instructions - Special Handling - I	Hazards	ACADANI ACCA
	12 , DOWLS SIRVNE ATURE	CAMBON DOOR
☐ Hazardous sample (see below)	☐ Non-hazardou	is sample
☐ Toxic	☐ Skin irritant	☐ Fiammable (FP< 4
☐ Pyrophoric	☐ Lachrymator	☐ Shock sensitive
☐ Acidic	☐ Biological	☐ Carcinogenic · sus
☐ Caustic	☐ Peroxide	☐ Radioactive
Other		
Sample Allocation/Chain of Possession	۵۰	
Organization Name		
Received By AMI AMAXA	Date Received 7	af-86 Time 0930
Transported By	Lab Sample No	096,088
Comments		
Inclusive Dates of Possession		
Organization Name		
Received By		
Transported By		
Comments	•	
Inclusive Dates of Possession		
Organization Name		
Received By		1
Transported By		1
Comments		
Inclusive Dates of Possession		

Form	1	ı
	_	_

Client ID	Plant 4
Workorder	8607086

Compiled	8-19-86
Submitted	

#### INITIAL AND CONTINUING CALIBRATION VERIFICATION 1

Units walnur

	Run	1 . 1 .	ial Cali				0				
Parameter	Date	True	Found		True	Found	Contin	uing Cal	ibratio gr		_
HC.	7-29-86				1 rue	Found	38	Found	5R	Found	├
	127-00	210	194	92							<u> </u>
											L
() a G	7-29-86	210	186	89							
$Q_{\mathbf{S}}$	8-11-86	.043	.042	98	.043	1041	95				Γ
						112.1.1.					T
Pb	8-11-86	.045	,015	100	045	2/1/	107				$\vdash$
1.0	10 11 012	100	1010	,00	-10-0	1046	102		-	-	╀
C = ("00)	C 11 C1		04.4.4	7:0	100		00	<b></b>			┞
	8-11-86						92		<b> </b>		Ļ
Se (#05)	8-11-86	.050	.045	90	.050	.043	86				
				<u> </u>							
Ha	8-17-86	20/20	.0C47	103	.0060	.0054	90	000	93		Γ
					:		1	11.00			T
Ca	8-11-86	200	1.86	93	2.00	190	94	<u> </u>	<del> </del>		T
ag Ba	12-11-26			105		1.87			<del> </del>		+
Col	<del> </del>	3.00	2.10	+-	3.00	2.14	107			<u> </u>	┾
<u>u</u>	<del> </del>	2.00	2.08	104	2.00	2.08	104		<u> </u>		Ļ
Cr		2.00	2.10	105	3.00	2.11	106			<u> </u>	L
							<u> </u>		}	<b>!</b>	
											Γ
							1			<del>                                     </del>	T
							<del>                                     </del>	<del>                                     </del>			+
	<del> </del>	<del>                                     </del>	<del>                                     </del>	<del> </del>	<del>                                     </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	╀
	<del> </del>		<del></del>	<del> </del>						<b> </b>	+
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			<u> </u>				1				Γ

١.	Control	Limits	for	۶R:	ICP	ES	
					AA	F	

Client ID	Plant 4
Workorder	8607086

SAMPHANANA HILLIA SUSAAA DAANAA DAANAA KAANAA KAANAA KAANAA KAANAA KAANAA KAANAA KAANAA KAANAA KAANAA KAANAA K

Compiled 8-19-86Submitted \_\_\_\_\_

Matrix EPextract

**BLANKS** 

Units Ugland.

						J	
		Initial	Conti	nuing Calib	ration	Prepar	
Parameter	IDL	Calibration Blank Value	<b> </b>	Blank Value	e3	Blank	Value
05	, 003	<.003	#			( 003	. 2
145	, 000	27000				<.003	-
	201		002 %			140	
Pb ·	.001	.003*	.002*			. 204*	
56	,002	2,002	<.002			<.002	
5L SL	. ००२	4.002	<.002				
Hg						2.000.2	· · · · · · · · · · · · · · · · · · ·
10			1			2.000	-
00	.M3	4.002	00*	-		<.002	
ag Ba Cd Oc	.001	.001*	.00*		<del></del>		
		. 607	<.001	<del></del>	<del></del>	2,001	
La	.003	<.002	<.002			4.002	
<u>uc</u>	.005	2.005	<.005			4.005	
			<u> </u>				
<del> </del>	<del> </del>		<del>                                     </del>		<del></del>	<del>  </del>	
<u> </u>						-	
					<del></del>	-	1
			<u> </u>			<b> </b>	
			1				
						**	

<sup>1.</sup> IDL = Instrument Detection Limit

<sup>\*</sup> Indicates value is less than 5X the IDL.

Form VI

Client ID	Plant 4
	8607086

Compiled <u>8-19-86</u>

Submitted

Matrix &Pextrou

DUPLICATES.

Type <u>analytical</u>

Units us/nl

Parameter	Sample No.	Control Limit	Sample (S)	Duplicate (D)	RPD 1	RPD Flac
(is	-02		2,003	2,003	NC	
Ph	-02		.015	1015	0	
Se	-02		2.002	2.002	X	
		······································				
						-
		<del></del>				

<sup>\*</sup> Indicates value is less than 5X IDL. ( IDL=instrument detection limit )

<sup>1.</sup> RPD=Relative percent difference=[|S-D|/((S+D)/2)]X100.

<sup>2.</sup>  $NC_1$ =Not calculable due to a value less than 5X the IDL.

NC =Not calculable due to a value less than the CRDL. (Contract Required Detection Limit)

<sup>=</sup>RPD out of control limit for matrix duplicate, which may indicate non-homogeneity of the sample.

#### Eorm VI

Client ID <u>Plan+ 4</u>
Workorder <u>8607086</u>

Managed Managed Managed Angeles (1988)

Compiled 8-19-86
Submitted

Matrix EP extract

DUPLICATES.
Type dightor

Units uglal

Parameter Og Ba Cd Cr	Sample No.	Control Limit	Sample (S)	Duplicate (D)	RPD 1	RPD Flag <sup>2</sup>
ag	Sample No.		.017	.020	16	
Ba			1,52 2,00Z	1,49	1.3	
CH			2,002	2.002	1,3 NC	
Cr			.037_	.022*	NC	
						<del> </del>
· · · · · · · · · · · · · · · · · · ·						<del> </del>
		<del>, , , , , , , , , , , , , , , , , , , </del>		-		1
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<del></del>						<del> </del>
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						<del>                                     </del>
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	<del>  </del>	<del></del>	<del> </del>			<del> </del>
	<u> </u>			<u> </u>		1

<sup>#</sup> Indicates value is less than 5X IDL. ( IDL=instrument detection limit )

<sup>1.</sup> RPD=Relative percent difference=[|S-D|/((S+D)/2)]X100.

<sup>2.</sup>  $NC_1$ =Not calculable due to a value less than 5X the IDL.

NC =Not calculable due to a value less than the CRDL. (Contract Required Detection Limit)

<sup>=</sup>RPD out of control limit for matrix duplicate, which may indicate non-homogeneity of the sample.

F	o	_	m	٧

Client ID	Plant 4
Workorder	8607006

Compiled 8-19-86 Submitted

Matrix EP extract

SPIKED SAMPLE RECOVERY Spiking method Chalston

	<u> </u>							
Parameter	Sample No.	Control Limit of%R	Spiked Sample Result (SSR)	Sample Result(SR)	Spike Added (SA)	D.F.	≴R <sup>1</sup>	\$R Flag <sup>2</sup>
as	-02		,58	2.003	.70		83	
ρb	- 05		.74	.00%	.80		92	
SL	-05		.13	<,002	.15		87	
Hg	-05		.050	,034	.02	1:10	80	
29	-05		.38	.03	.60		58	
Rg Ba Cd Cr			.03 .086	,62 4.80Z	12		60	
<u>Cr</u>	V		.53	.032_	.65		17	
						_		

Indicates value is less than 5X IDL. ( IDL=Instrument detection limit )

\$R = Percent Recovery = L(SSR - SR)/SA] X 100

. a=For analytical spike: \$R was within control limit only after sample dilution, which may indicate matrix interferences.

R=For matrix spike:

\$R was not within control limit, which may indicate matrix interferences.

B=Sample result was greater than 4 times spike added concentration, therefore spike added concentration is considered insignificant. 349

#### Form Y

lient 10 Plant 4	Compiled $8-19-8$	<u>6</u>
Norkorder 81007086	Submitted	
	Matrix EP & T	nact

SPIKED SAMPLE RECOVERY
Spiking method <u>Analytical</u>

Units ugland

Parameter	Sample No.	Control Limit of%R	Spiked Sample Result (SSR)	Sample Result(SR)	Spike Added (SA)	D.F.	≴R <sup>1</sup>	<b>%</b> R Flag <sup>2</sup>
Parameter 15	-02		.019	∠.003	,030		95	
Pb	-02		.040	015	,025		100	
Se.	-02		.019	٤،003	.025	11.0	76	
			.30	2.03	, 25 -	1:10	120	
<del></del>								
	<del> </del>							
	1	i	1			Į	1	Į.

Indicates value is less than 5X IDL. ( IDL=instrument detection limit )

. \$R = Percent Recovery = L(SSR - SR)/SA] X 100

a=For analytical spike: \$R was within control limit only after sample dilution, which may indicate matrix interferences.

R=For matrix spike:

\$R was not within control limit, which may indicate matrix interferences.

B=Sample result was greater than 4 times spike added concentration, therefore spike added concentration is considered insignificant. 7 350



#### CHAIN OF CUSTODY RECORD

	FIG	d Sample No. <u>April 33 1</u>	
Stream Characteristics:			
Sample Point Description WARE	NO BLOG 21 AREA SR-6	→ SB-10	
Stream Characteristics: ////	Ele	n <b>u</b>	
	FIOW	рп	
Company Sampled Address ### FORCE PLANT 4  Sample Point Description #### AND BLOG 21 AREA 58-6 > 58-10  Stream Characteristics: ####################################		<del>*************************************</del>	
Collector's Name PETER A LUA	TERREIIS Date/Time Sampled	7/21 -> 7/22/86	
Amount of Sample Collected // //	ASAN TARS	11 12 12 12 12 12 12 12 12 12 12 12 12 1	
Store at: Ambient 5°C -	10°C Kother 4°C		
☐ Caution - No more sample available	☐ Return unused portion of sample ☐	Discard unused portions	
Other Instructions - Special Handling -	Hazards		
		CARBON ODOR	
	<u> </u>		
☐ Hazardous sample (see below)	☐ Non-hazardou	s sample	
□ Toxic	☐ Skin irritant	☐ Flammable (FP<	
□ Pyrophoric	☐ Lachrymator	☐ Shock sensitive	
□ Acidic	☐ Biological	□ Carcinogenic · su	
□ Caustic	☐ Peroxide	☐ Radioactive	
□ Other			
C			
	n:		
Organization Name	Data Bassing 7:6	14-860 7: 093	
	Uate Received 12	nal nak	
	Lab Sample No.	2001000	
_			
	•		
Inclusive Dates of Possession		· · · · · · · · · · · · · · · · · · ·	
•			
Received By	Date Received	Time	
Transported By	Lab Sample No		
Comments			
nclusive Dates of Possession			

Client ID	Plant 4
Workorder	8607086

Compiled	8-19-86
Submitted	,

#### INITIAL AND CONTINUING CALIBRATION VERIFICATION 1

Units ugland,

										/ 	
	Run		ial Cali					uing Cal	ibratio	n	
Parameter	Date	True	Found	3R	True	Found	5R	Found	## ##	Found	%R
HC.	7-29-86	210	194	92							
0 a G	7-29-82	210	186	89							
04.5/	100100	210	100								
as	8-11-86	.043	.042	98	.043	.041	95				
		112 + 9				<del></del>					
Pb	8-11-86	.045	,015	100	045	1046	102				
										-	
Se (402)	8-11-86	.050	,044	88	.050	, OHO	92			.`	
~	8-11-56		.045		,050	,043	86				٠.٠
Ha	8-12-86	SOLO	,0062	103	.000	.0054	90	.0056	93		
1											
ag Ba	3-11-86	2.00	1.86	93	12.CO	1.87	94				
<u>8a</u>		2.00	2.10	105	3.00	2.14	107				
Ccl		2,00	2.08	104	3.00	2.D8	104				
Cr		2.00	2.10	105	3.00	3.11	106				
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	<u> </u>							· .	<u> </u>		
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	ļ			<u> </u>	<b> </b>	ļ		<b> </b>		ļ	
	<del> </del>			<u> </u>			<u> </u>		<b></b>		
	<u> </u>		<u> </u>	<u></u>	11	<u> </u>	<u> </u>	1	<u> </u>	1	

1.	Control	Limits	for	%R:	ICPES	
	-·				AA F	

Client ID Plant 4	Compiled 8-19-86
Workoruer 8607086	Submitted
	Matrix EPextract

**BLANKS** 

Units Ugland.

						J	
		<u>Initial</u> Calibration	Cont	inu ing Calib Blank Valu		Prepar Blank	
Parameter	IDL	Calibration Blank Value	1	2	3	1 1	2
05	.003	<.003				2.003	
			2034			1	
Pb	,001	.003*	.002¥			. 204*	
5	,002	2.002	<.607_			<.002	
52 SC	,002	4.002	<.002				
Hg						2.0002	
	~~?	4.002	~~*			<.002	
ag Ba Ca Or	.001	,001*	.ao* <.col			2,001	
Cá	.002	<.002 2.005	<.002			2.002	
ac	.005	2,005	2·005			4.005	
			<b> </b>				
						-	
						#	
						#	

<sup>1.</sup> IDL = Instrument Detection Limit

DADAM COURCES CONTROL OF THE SECOND CONTROL

<sup>\*</sup> indicates value is less than 5X the IDL.

Form YI

Client ID	Plant 4
Workorder	8607086

PROCESSA MODERNICA MODERNICA CONSISSIA MODERNICA MODERNICA MODERNICA MODERNICA MODERNICA MODERNICA MODERNICA M

Compiled <u>8-19-86</u> Submitted

Matrix EPextro-ct

DUPLICATES, . Type analytica

Units value

Parameter	Sample No.	Control Limit	Sample (S)	Duplicate (D)	RPD 1	RPD Flag <sup>2</sup>
as	-02		2,003	2,003	NC	
		! 				
Ph	-02		.015	1015	0	
C'a				1.002	1 10	
Se	-02		2.002	2.002	NC	<del> </del>
						<del> </del>
<b></b>		<del></del>				<del> </del>
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<u></u>						
		·				<b> </b>
			<del> </del>		<del></del>	<b> </b>
					<u> </u>	

- Indicates value is less than 5X IDL. ( IDL=instrument detection limit )
- RPD=Relative percent difference=[|S-D|/((S+D)/2)]X100.
- 2. NC, =Not calculable due to a value less than 5X the IDL.
  - '=Not calculable due to a value less than the CRDL. (Contract Required Detection Limit)
  - =RPD out of control limit for matrix duplicate, which may indicate non-homogeneity of the sample.

Form VI

Client ID	Plant 4
Workorder	8607086

Process and the second and the secon

Compiled <u>8-19-86</u>

Submitted

Matrix Epextract

DUPLICATES . Type digestion

Units uglad

					<u> </u>	
Parameter	Sample No.	Control Limit	Sample (S)	Duplicate (D)	RPD 1	RPD Flag <sup>2</sup>
ag	-02		.017	.020	16	<u> </u>
Gg Ba Cd Cr			1.52	1.49	1.3 NC	
Cd			2.002	1.002	NC	
Cr	V		.032	.022*	NC	
			<del> </del>			
						<del>                                     </del>
						<del> </del>
		<del> </del>				<del> </del>
			<del> </del>	<del> </del>		
			<del> </del>	<u> </u>		<del></del>
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						<b></b>
	1			1		<b>j</b>

- Indicates value is less than 5X IDL. ( IDL=instrument detection limit )
- 1. RPD=Relative percent difference=[|S-D|/((S+D)/2)]X100.
- 2.  $NC_1$  =Not calculable due to a value less than 5X the IDL.  $NC_1$  =Not calculable due to a value less than the CRDL. (Contract Required Detection Limit)
  - ▲ =RPD out of control limit for matrix duplicate, which may indicate non-homogeneity of the sample.

_				
-	$\sim$	_	m	v

Client ID	plant 4
Workorder	8607006

Compiled	8-19-86
Submitted	

Matrix EP extract

SPIKED SAMPLE RECOVERY

Spiking method <u>cleanshire</u>

Units ugland

	<del></del>		<b>.</b>	· · · · · · · · · · · · · · · · · · ·				
Parameter	Sample No.	Control Limit of%R	Spiked Sample Result (SSR)	Sample Result(SR)	Spike Added (SA)	D.F.	\$R <sup>1</sup>	\$R Flag <sup>2</sup>
as	-02		,58	2.003	.70		83	
Pb	-05		.74	.006	,80		92	
SL	-05		.13	4.002	.15		87	
Ha	-85		.050	,034	.02	1:10	80	
<del></del>								
Rg Ba Cd Cr	-05		,38	<i>,03</i>	.60		58	
Ba			10.3	.62	12		81	
Cd			.086	4.002	, 1.3		60	
Cr			.53	.032	.65		17	

Indicates value is less than 5X IDL. ( IDL=instrument detection limit )

. \$R = Percent Recovery = L(SSR - SR)/SA] X 100

. a=For analytical spike: \$R was within control limit only after sample dilution, which may

indicate matrix interferences.

interferences.

B=Sample result was greater than 4 times spike added concentration, therefore spike added concentration is considered insignificant.

#### Form Y

Client ID	Plant 4
	8607086

Compiled 8-19-Sto

Matrix EP Extract

SPIKED SAMPLE RECOVERY
Spiking method <u>Analyti</u> Cal

Units legiona

Parameter	Sample No.	Control Limit of%R	Spiked Sample Result (SSR)	Sample Result(SR)	Spik <b>e</b> Added (SA)	D.F.	%R <sup>1</sup>	\$R Flag <sup>2</sup>
<u>is</u>	-02		.019	∠.003	,020		95	
Pb	-02		.040	.015	,025		100	
Se.	-02		,019	4.003	.025		76	
			.30	2.03	, <i>3</i> 5	1:10	120	
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							<del> </del>	
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Indicates value is less than 5X IDL. ( IDL=instrument detection limit )

. \$R = Percent Recovery = L(SSR - SR)/SA] X 100

. a=For analytical spike: \$R was within control limit only after sample dilution, which may indicate matrix interferences.

R=For matrix spike: \$R was not within control limit, which may indicate matrix

interferences.

B=Sample result was greater than 4 times spike added concentration, therefore spike added concentration is considered insignificant.



#### **CHAIN OF CUSTODY RECORD**

Field Sample No. 860035-860045

Company Sampled / Address A/R F	FORCE PLANT 4	
Company Sampled Address AIR F Sample Point Description NARF	THO BLOG 21 AREA	5B-6 → SB-10
,		
Stream Characteristics: N/A Temperature	Flow	nH
Visual Observations/Comments		
Visual Observations/Comments		
Collector's Name PETER A WA	TERREUS Date/Time Samp	$led 7/21 \rightarrow 7/22/86$
Amount of Sample Collected _//_/12	ASON TARS	
Sample Description		
Sample Description <u>SOIC</u> Store at: □ Ambient □ 5°C □ -	10°C	
	•	
☐ Caution - No more sample available	☐ Return unused portion of samp	le 🗆 Discard unused portions
Other Instructions - Special Handling -	Hazards	
Other Instructions - Special Handling - SATRPLES 360041,8600	42 , 860043 STRONG H	YDROCARBON ODOR
☐ Hazardous sample (see below)	□ Non-haz	ardous sample
□ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C)
□ Pyrophoric	□ Lachrymator	☐ Shock sensitive
□ Acidic	☐ Biological	□ Carcinogenic - suspect
□ Caustic	☐ Peroxide	□ Radioactive
□ Other		
Sample Allocation/Chain of Possessio	n:	
Organization Name N15		7 1/4/
Received By All AMAXL Transported By Ped 41	Date Received	1 /3 / 30 Time <u>C12C</u>
Transported By	Lab Sample No. <u>50</u>	20 1036 , C38
Comments		
Inclusive Dates of Possession		
Organization Name		
Received By	Date Received	1 Time
Transported By	Lab Sample No	
Comments		
Inclusive Dates of Possession		
Organization Name		
Received By		
Transported By		
Comments		
Inclusive Dates of Possession		

#### Gross Alpha/Gross Beta Analysis

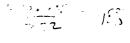
	H	ugiysis			1
Canala I D		DIVE 40	0.5 B		
Sample I.D	28-0-N 2	PIKE, 10	ul An-241 + 1.0 ml SR-	70	
Contract Name	RAS-AIRF	ORCE, 8-	19-86		
Sample Size	0.102	(S) L	or g		
Areal Density: Tare Weight:					1
filter/planchet	7.1775				
filter/planchet+sample	7.2791				
sample weight Original, Solid or Liquid:	101.58	(P)	<b>a</b> g		
for solid:1, for liq:2 Areal Density	1.00	(?)			
P/10.18(s) or P/19.63(l) Sample Count Time:	9.98	(A) m	g/cm2		_
in HoursBackground Count Time:	1.67	(T)			
in Hours Self Absorption Factor:	10.00	(TB)	Self Absorption Fac	tor	
Alpha Count Instrument Constant	0.25	(WA)	Beta Counts Instrument Constant		(WB)
Alpha Total Counts:	0.02	(KA)	Beta Total Counts:		(KB)
Total Counts: AlphaBackground Counts:		(CA)	BetaBackground Counts:	663	(CB)
AlphaCalculated Net Rate:	57.00	(BA)	Beta		(BB)
Alpha (pCi/g) Deviation:	87.88	(DA)	<pre>Beta (pCi/g) Deviation:</pre>	113.56	(DB)
Alpha (pCi/g)Quantification Limit:	10.52		Beta (pCi/g) Quantification Limi		•
Alpha (pCi/g)	15.04		Beta (pCi/g)	12.69	
Final Results: Alpha (pCi/g)	87.88	( 10.5 )	Beta (pCi/g)	113.56 (	7.0.1
55₹ c	47.00				7.0 /
	_		(7.22/,1015)	132 %	
87.9 - 12.7 11.63 110128					
Sp.:					

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#### Gross Alpha/Gross Beta Analysis

Sample I.D.	MIXED ST	TD - 10	ul AM-2	41 + 0.5 mL SR-90		
Contract Name	RAS-AIRI	FORCE, 8	-18-86			
Sample SizeAreal Density:	1.000	(S)	L or g			
Tare Weight: filter/planchet	7.2770					
filter/planchet+sample	7.2767					
sample weight Original, Solid or Liquid:	-0.33	(P)	mg			-
for solid:1, for liq:2 Areal Density	2.00	(?)				
P/10.18(s) or P/19.63(1) Sample Count Time:	-0.02	(A)	mg/cm2			
in HoursBackground Count Time:	1.67	(T)				
in Hours	10.00	(TB)	:	Self Absorption Factor		
Alpha Count Instrument Constant	0.86	(WA)		Beta Counts Instrument Constant		(WB)
Alpha	0.02	(KA)		Beta Total Counts:	0.02	(KB)
Alpha	117.00	(CA)		BetaBackground Counts:	644	(CB)
Alpha	57.00	(BA)		BetaCalculated Net Rate:	544.00	(BB)
Alpha (pCi/L)————————————————————————————————————	1.69	(DA)		Beta (pCi/L) Deviation:	7.22	(DB)
Alpha (pCi/L)	0.27			Beta (pCi/L) Quantification Limit:	0.46	
Quantification Limit: Alpha (pCi/L)	0.44		,	Beta (pCi/L)	10.83	
Final Results:	1 60	( 0.2	`	Poto (-Ci/I)	7 22	( 0.5 )
Alpha (pCi/L)	1.09	( 0.3	,	Beta (pCi/L)	1.22	( 0.5 )

1.69 -2%



#### Gross Alpha/Gross Beta Analysis

			5467
			86-67 86 67 6
RADIAN			86 01
			oss Beta
		nalysi 	
Sample I.D.	∙O.§MT. SR	-90	
Contract Name	RAS-AIRF	ORCE,8	-18-86
Sample Size	1.000	(\$)	L or g
Areal Density: Tare Weight:			
filter/planchet	7.2007		
filter/planchet+sample	7.2003		
sample weight	-0.35	(P)	mg
Original, Solid or Liquid: for solid:1, for liq:2-	2.00	(?)	
Areal Density		(1)	
P/10.18(s) or P/19.63(1) Sample Count Time:	-0.02	(A)	mg/cm2
in Hours	1.67	(T)	
Background Count Time:			
in Hours	10.00	(TB)	C-16 AN
Alpha Count	0.86	(WA)	Self Absorption Factor Beta Counts 0.91
Instrument Constant		( 4 <b>)</b>	Instrument Constant
Alpha Total Counts:	0.02	(KA)	Beta 0.02 Total Counts:
Alpha	7.00	(CA)	Beta 590
Background Counts:	£7.00	(= 4.)	Background Counts:
Calculated Net Rate:	57.00	(BA)	Beta 544.00 Calculated Net Rate:
Alpha (pCi/L)	-0.04	(DA)	Beta (pCi/L) 6.52
Deviation: Alpha (pCi/L)	0.16		Deviation:
Quantification Limit:	0.16		Beta (pCi/L) 0.44 Quantification Limit:
Alpha (pCi/L)	0.44		Beta (pCi/L): 0.83
Final Results: Note - C	alculate	d Rate	is below Detection Limit
Alpha (pCi/L)	< (	0.4	) Beta (pCi/L) 6.52 (
			•
		7	361
		•	

#### RADIAN

#### Gross Alpha/Gross Beta Analysis

Sample I.D	10uL AM-2	41 ST	D									
Contract NameRAS-AIRFORCE, 8-18-86												
Sample SizeAreal Density: Tare Weight:	1.000	(S)	L or g	3								
filter/planchet	7.2126											
filter/planchet+sample	7.2121											
sample weightOriginal, Solid or Liquid:	-0.46	(P)	mg									
for solid:1, for liq:2 Areal Density	2.00	(?)										
P/10.18(s) or P/19.63(1) Sample Count Time:	-0.02	(A)	mg/cm2	2								
in Hours	1.67	(T)										
Background Count Time:	10.00	(mp.)										
in Hours Self Absorption Factor:	10.00	(TB)		Self Absorption Factor								
Alpha Count	0.86	(WA)		Beta Counts	0.91	(WB)						
Instrument Constant	0.00	(MT)		Instrument Constant	0.91	(47)						
Alpha	0.02	(KA)		Beta	0.02	(KB)						
Total Counts:	0,02	(121)		Total Counts:	*****	(1)						
Alpha	148.00	(CA)		Beta	133	(CB)						
Background Counts:		<b>\,</b>		Background Counts:		<b>\ /</b>						
Alpha	57.00	(BA)		Beta	544.00	(BB)						
Calculated Net Rate:				Calculated Net Rate:		, ,						
Alpha (pCi/L)	2.18	(DA)		Beta (pCi/L)	0.55	(DB)						
Deviation:				Deviation:								
Alpha (pCi/L)	0.29			Beta (pCi/L)	0.25							
Quantification Limit:				Quantification Limit:								
Alpha (pCi/L)	0.44			Beta (pCi/L)	0.83							
Final Results:												
Alpha (pCi/L)	2.18 (	0.3	)	Beta (pCi/L)	0.55	( 0.3 )						

#### CALCULATION SHEET FOR HI-FRO GAMMA SPECTRA

SAMPLE ID:	DIM SLA	NK, 3-	23-96	· S	AMPLE SIZE:	0.093	(KILO	eram)										
COUNTED IN	: TEFLON	JAR		GEDMETRY	CORRECTION:	0.000268698	-											
COUNT TIME	2000	ύ		(SECONDS)	9	FICIENCY =	- -(	0.0462	+	ENERSY	<b>ι</b> 0.	.001802	+ E	NER. \	2≠-0.000	00032		
	BKGD CT	=	72	MDA =	99.77	pCi/kg	SAMPLE:				ELANK	BACKER	- Cund	:			- ACTIVIT -7:	-
MCA LABEL		PEAK	IĐ	ENERGY	INTENSITY	DIS./ENT	SROSS	COUNTS	MET	COLINTS	GROSS	COUNTS	NET	CCLAN	TS ABS	. SET	ąči p (ΚΙΔΟ	
		Cs-1	 37	561.50	0.84800	1.00283	-	72		42.17						42		∓ <b>9.</b> ∂

CALCULATION SHEET FOR LO-PRO SAMMA SPECTRA

SAMPLE ID: CS-137 S	BTD.9-23-8	<b>6</b>	SAMFLE SIZE:	1	(KILOGRAM)					
COUNTED IN: TEFLON C	JAR	GEDMETRY	CORRECTION:	0.000373664	•					
COUNT TIME: 20000	)	-  SECONDS: 	Ē	FFICIENCY =	0.029213	+ ENE	ERGI* Ú	.00167J + ENER. '2#-	0.00000032	
1536771 BkGD CT	= ()	- MDA =	240559.10	pC1/STD	SAMPLE:		ELANK	EACKGROUND:		HCTIVITY in
MCA LAREL	PEAK ID	ENERGY	INTENSITY	DIS./CNT	SROSS COUNTS	NET COL	UNTS BROSS	COUNTS NET COUNTS	ABS. WET	pDi per :KILOGRAM)
	Cs-137	551.50	0.84900	0.99202		1576771	 L.úú		157a771	

CALCULATION SHEET FOR HI-FRO SAMMA SPECTRA

SAMPLE ID: ES-137	STD. 8-22-	6	SAFLE SIZE:	1	(KILDGRAM)				
COUNTED IN: TEFLEN	JAR	- Geometry	CORRECTION:	0.000268698	_				
COUNT TIME: 2000	)	-   Seconds.  -	) <u>E</u>	FICIENCY =	- -v.0462	+ ENERGY	0.001802 + EMER. 2+-	0.00000032	
1090251 BKGD CT	= 0	- #DA =	239917.18	pCi/STD	SAMPLE:		BLANK BACKGROUND:		ACTIVITY in
MCA LABEL	FEAK ID	ENERGY	INTENSITY	DIS./CNT	GROSS COUNTS	NET COUNTS	GROSS COUNTS NET COUNTS	ABS. NET	pû: par HILOGRAM)
	2s-137	551.50	0.84800	1.00283	- <del></del> -	1090251.00		1090751	779917 2

CALCULATION SHEET FOR LU-FRO SAMMA SPECTRA

SAMPLE ID: BL	HW. DIN	Š	AMFLE SIZE:	i wilookan		
COUNTED IN: LI	18 "3"	GEDMETRY	CORRECTION: 0.000166	 45		
COUNT TIME:	55000	.= (Seconds) :-	EFFICIENCY	= 0.029213	+ ENERGY+ 0.001673 + ENER, 2+-	5.000003 <u>3</u> 2
BK	60 CTS= 38	MDA =	3.39 pC1/L	SAMPLE:	ELANK BACKGROUND:	AUTIVITO 10
MCA JABEL	FEAK 10	ENERGY	INTENSITY DIS.	MT ERCSS COUNTS	NET COUNTS GROSS COUNTS NET COUNTS	pči per ABS. NET (KILSSFAM)
			A 249AA A 261	07 07	71 77 MDA	7. 7.4



#### **CHAIN OF CUSTODY RECORD**

	Field	ld Sample No. <u>750096 — 75.9</u>
Company Sampled / Address	FORCE PLANT 4	
Sample Point Description	1BFA 50-11	
	Flow	
Callegade Name (FTFD 1 1)	<u> ファドルデルミ</u> Date/Time Sampled	7/2 1/8/
Amount of Sample Collected 3	1A SON TARS	1121126
Sample Description 5014	17.2070	
Store at: Ambient 5°C -	10°C Sother 1°C	
☐ Caution - No more sample available	☐ Return unused portion of sample ☐ Hazards	Discard unused portions
☐ Hazardous sample (see below)	□ Non-hazardous	s sample
□ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C)
□ Pyrophoric	☐ Lachrymator	☐ Shock sensitive
□ Acidic	☐ Biological	☐ Carcinogenic - suspect
□ Caustic	☐ Peroxide	☐ Radioactive
Other ALPHA P.F.7; CAM	TA A	
Sample Allocation/Chain of Possessio Organization Name	· · · · · · · · · · · · · · · · · · ·	
Received By	Date Received	Time
	Lab Sample No ೯೪೦೦	7-095
Comments		
Inclusive Dates of Possession		
	Date Received	
	Lab Sample No	
Comments		
	Date Received	
Transported By	Lab Sample No	
Comments		
nclusive Dates of Possession		·

CALCULATION SHEET FOR LO-PRO GAMMA SPECTRA

SAMPLE ID:	DIW BLAN	K, 8-	22-86	<b>5</b>	SAMFLE SIZE:	0.093	(KILOGRAM)				
COUNTED IN	:TEFLON J	AR		SECHETRY	CORRECTION:	0.000373664					
COUNT TIME	20000			(SECONDS:	; ε	FFICIENCY =	0.029213	+ ENERGY	• 0.001673 + ENER.º2*-	0.00000032	
	BKGD CT	=	72	MDA =	70.97	pCi/kg	SAMPLE:		BLANK BACKGROUND:		ACTIVITY in
HCA LABEL		PEAK	ID	ENERGY	INTENSITY	DIS./CNT	GROSS COUNTS	NET COUNTS	GROSS COUNTS NET COUNTS	ABS. NET	oCi per (KILOSRAM)
	<del></del>	Cs-1	 37	661.60	0.84800	0.99202	72	42.17		42	71.0

CALCULATION SHEET FOR LO-FRO GAMMA SPECTRA

SASSAMONINAMI SASSASON PASSASASIA MASSASASIA MASSASASIA MASSASASIA MASSASASIA MASSASASIA MASSASASIA MASSASIA M

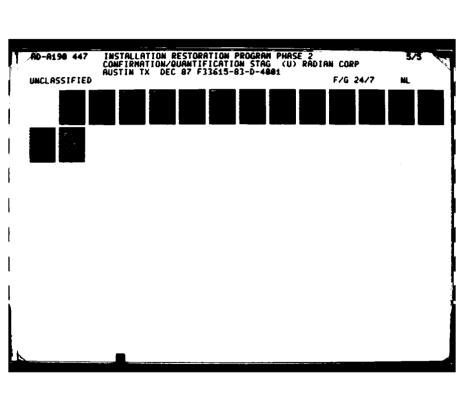
SAMPLE ID: CS-137 STD.	,8-13-8	6 8	AMPLE SIZE:	1	(KILOGRAM)				
COUNTED IN: TEFLON JAR		GEOMETRY	CORRECTION:	0.000373664					
COUNT TIME: 20000		(SECONDS)	EF	FICIENCY =	0.029213	+ ENER	SY* 0.001673 + ENER. 2*-	i.00000032	-
1505110 BKGD CT =	0	MDA =	235603.03	pCi/STD	SAMPLE:		BLANK BACKGROUND:		ACTIVITY in
MCA LABEL PI	EAK ID	ENERGY	INTENSITY	DIS./CNT	GROSS COUNTS	NET COUN	TS GROSS COUNTS NET COUNTS	ABS. AET	(KILIGRAM)
C:	=-137	561.50	0.84800	0.99202		1505110.	00	1505110	235603.0

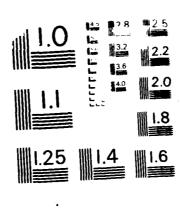
CALCULATION SHEET FOR HIFFRO GAMMA SPECTRA

SAMPLE ID: CS-137	970, 8-13- 	5 5	AMPLE SIZE:	i	(KILO <del>SRAM</del> )				
COUNTED IN: TEFLON	JAR	- Geometry	CORRECTION:	0.000258698	-				
COUNT TIME: 2000	)	- (SECCNOS) -	<b>E</b> F1	FICIENCY =	- -0.0462	+ ENERGY#	0.001 <b>3</b> 02 + EMER. 2*-	66900032	
1082308 8kSD CT	= 0	MDA =	238169.26	pCı/STD	SAMPLE:	e.	ANK BACAGROUND:		ACTIVITY in
MCA LABEL	FEAK ID	ENERGY	INTENSITY	DIS./ONT	GROSS COUNTS	MET COUNTS SR	OSS COUNTS NET COUNTS	ABS. NET	pCi per kKILOSRAM:
	05-107	561.60	0.84900	1.00283	j	1082308.00		1687308	772112 7

CALCULATION SHEET FOR HI-FRO GAMMA SPECTRA

SAMPLE ID:	BLANK DI	¥		ŝ	EAMFLE BIZE:		(KILDSRAM)				
COUNTED IN				- GEGMETRY	CORRECTION: (	. 000119678	•				
CCUNT TIME				· 《Seconds》	Ekt	ICIENCY =	-∂.∂452	+ ENERGY+	0.001602 + EXER. I*	-1.100(10 <b>3</b> ]	
	SKOD CTS	=	44	MDA =	5.10 p	C1/L	SAMPLE:	- B	LANA BACKSROUND:		ADTIVIT IA - cili ser
YCA LAREL		PEAK	ΙŪ	ENERGY	INTENSITY	DIS./CNT	SROSS COUNTS	NET COUNTS 3	ROSS COUNTS NET COUNTS	-ê3. Æ⊺	
		Cs=:		sat ad	6 2420c	1 00005	11	শ্র ব্র থ	Ni	-1	= ·





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#### RADIAN

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#### Gross Alpha/Gross Beta Analysis

Sample I.D10uL AM-241 STD									
Contract NameRAS-AIRFORCE,8-18-86									
Sample SizeAreal Density: Tare Weight:	1.000	(S)	L or g						
filter/planchet	7.2126								
filter/planchet+sample	7.2121								
sample weight Original, Solid or Liquid:	0.46	(P)	mg						
for solid:1, for liq:2 Areal Density	2.00	(?)							
P/10.18(s) or P/19.63(1) Sample Count Time:	-0.02	(A)	mg/cm2						
in Hours	1.67	(T)							
Background Count Time:									
in Hours	10.00	(TB)	- 45 44						
Self Absorption Factor:	0.06	(*** )	Self Absorption Factor						
Alpha Count	0.86	(WA)	Beta Counts 0.91 (WB)						
Instrument Constant	0 00	/17 A \	Instrument Constant						
Alpha Total Counts:	0.02	(KA)	Beta 0.02 (KB)						
Alpha	149 00	(CA)	Total Counts: Beta 133 (CB)						
Background Counts:	140.00	(CA)	Background Counts:						
Alpha	57.00	(BA)	Beta 544.00 (BB)						
Calculated Net Rate:	37.00	(DA)	Calculated Net Rate:						
Alpha (pCi/L)	2.18	(DA)	Beta (pCi/L) 0.55 (DB)						
Deviation:	2.10	(211)	Deviation:						
Alpha (pCi/L)	0.29		Beta (pCi/L) 0.25						
Quantification Limit:	0,0,		Quantification Limit:						
Alpha (pCi/L)	J.44		Beta (pCi/L) 0.83						
Final Results:									
Alpha (pCi/L)	2.18	( 0.3	) Beta (pCi/L) 0.55 ( 0.3 )						

#### RADIAN

#### Gross Alpha/Gross Beta Analysis

Sample I.D0.5ML SR-90									
Contract NameRAS-AIRFORCE,8-18-86									
Sample SizeAreal Density:	1.000	(8)	L or g						
Tare Weight: filter/planchet	7.2007								
filter/planchet+sample	7.2003								
sample weightOriginal, Solid or Liquid:	-0.35	(P)	mg						
for solid:1, for liq:2- Areal Density	2.00	(?)							
P/10.18(s) or P/19.63(1) Sample Count Time:	-0.02	(A)	mg/cm2						
in HoursBackground Count Time:	1.67	(T)							
in Hours Self Absorption Factor:	10.00	(TB)	Self Absorption Factor						
Alpha Count Instrument Constant	0.86	(WA)	Beta Counts 0.91 (WB) Instrument Constant						
Alpha Total Counts:	0.02	(KA)	Beta 0.02 (KB) Total Counts:						
AlphaBackground Counts:	7.00	(CA)	Beta 590 (CB) Background Counts:						
AlphaCalculated Net Rate:	57.00	(BA)	Beta 544.00 (BB) Calculated Net Rate:						
Alpha (pCi/L) Deviation:	-0.04	(DA)	Beta (pCi/L) 6.52 (DB) Deviation:						
Alpha (pCi/L)Quantification Limit:	0.16		Beta (pCi/L) 0.44						
Alpha (pCi/L)	0.44		Quantification Limit: Beta (pCi/L) 0.83						
			e is below Detection Limit						
Alpha (pCi/L)	<b>&lt;</b>	( 0.4	) Beta (pCi/L) 6.52 ( 0.4 )						

### Gross Alpha/Gross Beta Analysis

Sample I.D.	MIXED S	TD - 10	Oul AM-241 + 0.5 mL SR-90	
Contract Name	RAS-AIR	FORCE, 8	3-18-86	
Sample SizeAreal Density: Tare Weight:	1.000	(S)	) L or g	
filter/planchet	7.2770			
filter/planchet+sample	7.2767			
sample weight	-0.33	(P)	) mg	
Original, Solid or Liquid: for solid:1, for liq:2	2.00	(?)		
Areal Density P/10.18(s) or P/19.63(1)	-0.02	(A)	mg/cm2	
Sample Count Time: in Hours	1.67	(T)		
Background Count Time: in Hours	10.00	(TB)		
Self Absorption Factor:			Self Absorption Factor	
Alpha Count Instrument Constant	0.86	(WA)	Beta Counts 0.91 ( Instrument Constant	(WB)
Alpha	0.02	(KA)	Beta 0.02 (	(KB)
Total Counts: Alpha	117.00	(CA)	Total Counts: Beta 644 (	(CB)
Background Counts: Alpha	57.00	(BA)	Background Counts: Beta 544.00 (	BB)
Calculated Net Rate:		••••	Calculated Net Rate:	,
Alpha (pCi/L) Deviation:	1.69	(DA)	Beta (pCi/L) 7.22 ( Deviation:	DB)
Alpha (pCi/L)	0.27		Beta (pCi/L) 0.46	
Quantification Limit: Alpha (pCi/L)	0.44		Quantification Limit: Beta (pCi/L, 0.83	
Final Results:				
Alpha (pCi/L)	1.69	( 0.3	Beta (pCi/L) 7.22 (	0.5)

1.69 -:0%

### Gross Alpha/Gross Beta Analysis

```
Sample I.D.-----SB-6-D SPIKE, 10 uL AM-241 + 1/0 mL SR-90
Contract Name------RAS-AIRFORCE, 8-19-86
Sample Size----- 0.102
Areal Density:
 Tare Weight:
   filter/planchet---- 7.1775
   filter/planchet+sample 7.2791
   sample weight----- 101.58
                                (P) aq
Original, Solid or Liquid:
 for solid:1, for liq:2--
                         1.00
                                (?)
Areal Density
 P/10.18(s) or P/19.63(1)
                         9.98
                                (A) mg/cm2
Sample Count Time:
 in Hours-----
                         1.67
                               (T)
Background Count Time:
 in Hours----- 10.00
                               (TB)
Self Absorption Factor:
                                         Self Absorption Factor
                         0.25
                               (WA)
                                           Beta Counts-----
                                                               0.59
                                                                     (WB)
 Alpha Count----
Instrument Constant
                                         Instrument Constant
 Alpha-----
                         0.02
                               (KA)
                                           Beta-----
                                                               0.02
                                                                     (KB)
Total Counts:
                                         Total Counts:
 Alpha----- 173.00
                                           Beta-----
                                                                     (CB)
                                (CA)
                                                                663
                                         Background Counts:
Background Counts:
                                           Beta----- 544.00
 Alpha---- 57.00
                                (BA)
                                                                     (BB)
Calculated Net Rate:
                                         Calculated Net Rate:
                                           Beta (pCi/g)----- 113.56
 Alpha (pCi/g)----- 87.88
                               (DA)
                                                                     (DB)
Deviation:
                                         Deviation:
 Alpha (pCi/g)----- 10.52
                                           Beta (pCi/g)-----
                                                              7.03
Quantification Limit:
                                         Quantification Limit:
 Alpha (pCi/g)----- 15.04
                                           Beta (pCi/q)----- 12.69
Final Results:
 Alpha (pCi/g)----- 87.88 ( 10.5 )
                                           Beta (pCi/g)----- 113.56 ( 7.0 )
   55- 5
```



### **CHAIN OF CUSTODY RECORD**

860049 ->

	1	Field Sample No. 860054		
Company Sampled / Address				
Sample Point Description <u>BLD6</u>	21			
Stream Characteristics: N/A Temperature				
Visual Observations/Comments	Flow	рн		
Collector's Name PETER A NA	TERREUS Date/Time Sampled	8/11-8/12/86		
Amount of Sample Collected 6 H	ASIN JARS			
Sample Description	inec phone Roc			
_				
Caution - No more sample available	☐ Return unused portion of sample	☐ Discard unused portions		
Other Instructions - Special Handling -				
☐ Hazardous sample (see below)	☐ Non-hazard	ous sample		
□ Toxic	☐ Skin irritant	☐ Flammable (FP< 40°C		
☐ Pyrophoric	☐ Lachrymator	☐ Shock sensitive		
□ Acidic	☐ Biological	☐ Carcinogenic - suspect		
□ Caustic	☐ Peroxide	☐ Radioactive		
□ Other				
Sample Allocation/Chain of Possessig	on:			
Organization Name K15	-,			
Received By Transported By AW	Oliver Date Received _	513 56 Time 1330 3605055		
Transported By	Lab Sample No	3KCSC55		
Comments				
Inclusive Dates of Possession				
Organization Name				
Received By	Date Received _	Time		
Transported By	Lab Sample No			
Comments				
Inclusive Dates of Possession				
Organization Name				
Received By	Date Received	Time		
Transported By	Lab Sample No			
Comments				
Inclusive Dates of Possession				

### Form II

Client ID RANT 4	Compiled	9-10-86
Workorder <u>36-08-058</u>	Submitted	9-10-86 14

## INITIAL AND CONTINUING CALIBRATION VERIFICATION 1

Units ug/ml

Run Initial Calib.			Continuing Calibration								
Parameter	Date	True	Found	%R	True	Found	%R	Found	5R	Found	_
_As	8-26-86	0.043	0.044	102	0.043	0.041	95	0.042	98	0.039	9
РЬ	8-26-86	0.045	0.145	100	0.045	0.045	100	0.049	109		
se	8-26-86	0.050	0.052	104	0.050	0.048	96	0.049	98	0.058	_
На	9-25-86	0.0060	0.0066	110	0.0060	0.0068	1/3				-
Aq	8-28-86	2.00	2.18	109	2.00	2.19	110	2.17	108		
Ba	2-28-86	2.00	2.10	105	2.00	2.14	107	2.13	106	ļ	_
Cd	.,	2.00	2.03	102	2.00	2.11	106	2.11	106		_
Cr	9-10-86	2.00	2.03	102	2.00	2.07	104	2.09	104		
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1.	Control	Limits	for	۶R:	<b>ICPES</b>	
					AA F	

Client ID PUNT 4		Compiled 9-10-86
Workorder <u>86-08-095</u>		Submitted
	BLANKS	Matrix <u>aguerus</u>
	DD///CO	Units ug/ml

		<u>Initial</u> Calibration	Cont	inuing Calib Blank Valu		Prepar Blank	
Parameter	IDL	Blank Value	<b>1</b>	2	3	1	2
As	0.003	<0.003	€0.003			<0.003	
Pb	0.001	<0.001	<0.001			0.004	
5e	0.002	<0.002	€0.002	<0.002	0.002*	0.005	
На	0.0002					<0.0002	-
Ag	0.002	<0.002	0.007*	0.018		0.003*	
Ba	0.001	<0.001	<0.001	0.002 *		0.005	
Cd	0.002	<0.002	<0.002	<0.002		<0.002	-
Cr	0.005	<0.005	<0.005	<0.005		<0.005	
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<sup>1.</sup> IDL = Instrument Detection Limit

<sup>\*</sup> Indicates value is less than 5X the IDL.

### Form Y

Client ID PLANT 4	Compiled	9-10-86
Workorder <u>86-08-058</u>	Submitted	
	Matrix	aguerra
	SPIKED SAMPLE RECOVERY	

Spiking method analytical

Units ug/ml Control Sp Iked Sample Limit Sample Sample Spike **%**R<sup>1</sup> %R Flag Parameter of\$R Result (SSR) Result(SR) Added\_(SA) D.F. No. A5 058-06 0.020 20.003 0.020 100 Pb 058-04 0.61 0.35 0.25 104 50 70 0.014 058-06 <0.002 0.020 5e 058-06 0.24 <0.02 020 1:10 120

- \* Indicates value is less than 5X IDL. ( IDL=instrument detection limit )
- 1. \$R = Percent Recovery = L(SSR SR)/SAJ X 100
- 2. a=For analytical spike: \$R was within control limit only after sample dilution, which may indicate matrix interferences.

B=Sample result was greater than 4 times spike added concentration, therefore spike added concentration is considered insignificant. 7379

### Form Y

Client ID	PLANT 4	Compiled	9-10-86
Workorder .	86-08-058	Submitted	

SPIKED SAMPLE RECOVERY

Splking method <u>pre-degestion</u>

Units ug/ml

Matrix

						10.	1
Parameter	Sample No.	Control Limit of%R	Spiked Sample Result (SSR)	Sample Result(SR)	Spike Added (SA)	D.F. 3R1	%R Flag
As	058-06	75-125	0.58	<0.003	0.70	83	
Pb	058-06	75-125	0.76	0.008	0.80	94	
Se	058-06	75-125	0.14	<0.002	0.15	93	
Hg	058-06	75-125	0.0044	0.0003*	0.0040	102	
Aa	058-05	75-125	0,45	0.004*	0.60	74	R 44
89	058-05	75-125	9.54	Q. lla	12.0	78	
Cd	058-05	75-125	0.096	<0.002	0.13	74	Restard
Ag	black	75-125	0.49	0.003*	0.60	81	
Ba	black spike	15-125	10.4	0.605	12.0	87	
<u>Cd</u>	bland spike	75-125	0.105	<0.002	0.13	81	
Cr	058-05	75-125	0.89	0.005*	1.00	38	
					-		

- \* Indicates value is less than 5X IDL. ( IDL=instrument detection limit )
- 1. \$R = Percent Recovery = L(SSR SR)/SAJ X 100
- 2. a=For analytical spike: \$R was within control limit only after sample dilution, which may indicate matrix interferences.

B=Sample result was greater than 4 times spike added concentration, therefore spike added concentration is considered insignificant. 7 380

### Form VI

Client ID PUNT 4	Compiled	9-10-86
Workorder <u>86-08-458</u>	Submitted	
	Matrix	equences
DUP	LICATES	0

Type analytical

Units ug/n/

			·		70	
Parameter	Sample No.	Control Limit	Sample (S)	Duplicate (D)	RPD 1	RPD Flag
Pb	058-04		0.35	0.36	2.8	<del>                                     </del>
50	058-04		<0.002	CO.002	NC	NC
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					<del> </del>	<del> </del>

- Indicates value is less than 5X IDL. ( IDL=instrument detection limit )
- 1. RPD=Relative percent difference=[|S-D|/((S+D)/2)]X100.
- 2.  $NC_1$ =Not calculable due to a value less than 5X the IDL.
  - NC =Not calculable due to a value less than the CRDL. (Contract Required Detection Limit)
  - ^ =RPD out of control limit for matrix duplicate, which may indicate non-homogeneity of the sample.

### Form VI

Client ID PLANT 4	Compiled	9-10-86
Workorder <u>86-08-058</u>	Submitted	
	Matrix	aqueend

### **DUPLICATES**

### Type me digestion

Units ug/ml

Parameter	Sample No.	Control Limit	Sample (S)	Duplicate (D)	RPD <sup>1</sup>	RPD Flag		
As	058-05		0.003*	< 0.003	NC	Ne		
Pb	058-05		0.043	0.086	67			
<u> 5e</u>	058-05		<0.002	<0.002	NC	NC		
_1g	058-04		0.015	0.019	24			
Ba	058-04		0.94	0.95	1.0	<u> </u>		
Cd	058-04		0.008*	0.009*	NC	NC		
Cr	058-04		0.018*	0.017*	NC	NC		
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						<u> </u>		

Indicates value is less than 5X IDL. ( IDL=instrument detection limit )

<sup>1.</sup> RPD=Relative percent difference=[|S-D|/((S+D)/2)]X100.

<sup>2.</sup>  $NC_1$  = Not calculable due to a value less than 5X the IDL.

NC = Not calculable due to a value less than the CRDL. (Contract Required Detection Limit)

<sup>=</sup>RPD out of control limit for matrix duplicate, which may indicate non-homogeneity of the sample.

# QUALITY CONTROL DATA SUMMARY

Comp 1 led LH H 9-10-8/2

Submitted 9.12-86

		BLANKS												
Units Inlan		SR F												
		SA												
	RECOVERY	SSR SR												
	SPIKE	SSR					:							
		SAMP#												
		RPD												
	ALYS1S	DUPL												
Clent MANT 4	ICATE AN	# SAMP DUPL												
	1dnd	SAMP#												
				•										
	IBRATION SATION ST	TRUE	2.0											
	CAL	FOUND	3/3											
Workorder <i>80.01505</i>		DATE												
		PARAMETER	C56 /HC					7	3	83				

RPD = [(15-D1)/((S+D)/2)] x 100
RPD = Relative Percent Difference
NC = Not calculable due to a value
less than five times the IDL

SPIKE \$R = [(SSR-SR)/SA] x 100
\* = Value is less than five times
the instrument detection limit
IDL = Instrument Detection Limit

A = Analytical
P = Predigestion
SSR = Spiked Sample Result

SSK = Spiked Sample SR = Sample Result SA = Spiked Added

### RADIAN

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<u>L</u>/V// FILMED D//C